# VL2500™ Spot Luminaire



## USER'S MANUAL

VL2500™ Spot Luminaire User’s Manual

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Version as of: 05-January-2004

Part number: 02.9676.0019 A

# How To Obtain Warranty Service

A copy of the Vari-Lite Limited Warranty was included in the shipping package for this VARI❋LITE® product.

To obtain warranty service, please contact customer service at 1-877-VARI-LITE (1-877-827-4548), +1-214-647-7880, or customerservice@genlyte.com and request a Return Material Authorization (RMA) for warranty service. You will need to provide the model and serial number of the item being returned, a description of the problem or failure and the name of the registered user or organization. If available, you should have your sales invoice to establish the date of sale as the beginning of the warranty period.

Once you obtain the RMA, pack the unit in a secure shipping container or in its original packing box. Fill out the RMA form included at the end of this manual and place in shipping container along with a copy of your invoice (if available). Write the RMA number legibly on or near the shipping address label and return the unit, freight prepaid to:

**Vari-Lite**
**Attention: RMA#_____________**
**10911 Petal Street**
**Dallas, Texas 75238 USA**
**Attention: Warranty Service**

As stated in the warranty, it is required that the shipment be insured and FOB our service center.

# Compliance Notice

**FCC** This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with Vari-Lite system, service, and safety guidelines, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

### Declaration of Conformity

We declare, under our sole responsibility, that this product complies with the relevant clauses of the following standards and harmonized documents:

#### Safety

EN 60598-1:1997 Luminaire Safety Standard, General Requirements
EN 60598-2 17:1989 Specification for Luminaires for Stage and Studio Lighting

#### EMC

EN 55022A:1994 Radiated and Conducted Emissions
EN 50082-1:1997 Generic Immunity Standard

We certify that the product conforms to the protection requirements of council directives: 73/23/EEC (LVD) and 89/336/EEC (EMC)

# Safety Notice

It is extremely important to read ALL safety information and instructions provided in this manual and any accompanying documentation before installing and operating the products described herein. Heed all cautions and warnings during installation and use of this product.

Safety symbols used throughout this manual are as follows:

**CAUTION** advising of potential damage to product.

**WARNING** advising of potential injury or death to persons.

GENERAL INFORMATION PERTAINING TO PROTECTION AGAINST ELECTRICAL SHOCK, FIRE, EXPOSURE TO EXCESSIVE UV RADIATION, AND INJURY TO PERSONS CAN BE FOUND BELOW.

**WARNING:**
**INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST FIRE**

1. VARI❋LITE® luminaires have been designed for use with specific lamp types. The VL2500 spot luminaire requires a certain Philips or Osram HID lamp. Installing another type of lamp may be hazardous.
2. Luminaires may be mounted on any type of surface as long as mounting instructions are followed. See instructions detailed in this manual.
3. Note distance requirement from combustible materials or illuminated objects for VARI❋LITE® luminaires.

**WARNING:**
**INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK**

1. VARI❋LITE® luminaires are designed for dry locations only. Exposure to rain or moisture may damage luminaire.
2. Disconnect power before servicing any VARI❋LITE® equipment.
3. Servicing to be performed by qualified personnel only.

**WARNING:**
**INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST EXCESSIVE EXPOSURE TO UV RADIATION**

1. Many VARI❋LITE® luminaires use a lamp that produces UV radiation. DO NOT look directly at lamp.
2. It is hazardous to operate luminaires without lens or shield. Shields, lenses, or ultraviolet screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired. For example, by cracks or deep scratches.

**WARNING:**
**INSTRUCTIONS FOR PROTECTION AGAINST INJURY TO PERSONS**

1. Exterior surfaces of the luminaire will be hot during operation. Use appropriate safety equipment (gloves, eye protection, etc.) when handling and adjusting hot equipment and components.
2. Luminaires will have a hot lamp when operating. Disconnect power and allow lamp to cool before replacing.
3. Arc lamps emit ultraviolet radiation which can cause serious skin burn and eye inflammation. Additionally, arc lamps operate under high pressure at very high temperatures. Should the lamp break, there can exist a danger of personal injury and/or fire from broken lamp particles being discharged.
4. Wear eye protection when relamping.
5. Appropriate safety equipment (gloves, eye protection) should be used when handling damaged lamps.
6. If lamp is touched with bare hands, clean lamp with denatured alcohol and wipe with lint-free cloth before installing or powering up the luminaire.
7. The lamp shall be changed if it has become damaged or thermally deformed.

**WARNING:**
**RF INTERFERENCE**

1. This is a Class A product. In a domestic environment this product may cause radio interference, in which case, the user may be required to take adequate measures.

**ARC LAMP CHARACTERISTIC CONSIDERATIONS**

1. Arc lamps require a period of time to relight after a power interruption or a severe voltage dip. In some cases, lamp will automatically relight after it has cooled depending on Lamp Power-Up State configuration setting.
2. Burning position is Universal.

# Sicherheitshinweise

Es ist äußerst wichtig, ALLE Sicherheitsinformationen und -hinweise in diesem Handbuch und dem beiliegenden Informationsmaterial zu lesen, bevor Sie die hierin beschriebenen Produkte installieren bzw. bedienen. Halten Sie bei der Installation und dem Einsatz dieses Produkts alle Warnhinweise und Vorsichtsmaßnahmen ein.

Folgende Sicherheitssymbole werden in diesem Handbuch verwendet:

**VORSICHT** - weist auf möglichen Produktschaden hin.

**WARNUNG -** weist auf mögliche Körperverletzung und Lebensbedrohung hin.

NACHSTEHEND FINDEN SIE ALLGEMEINE HINWEISE ÜBER SICHERHEITSVORKEHRUNGEN GEGEN ELEKTROSCHOCK, FEUER, ÜBERHÖHTE UV-STRAHLUNG UND KÖRPERVERLETZUNGEN.

**WARNUNG:**
**HINWEISE ZUM FEUERSCHUTZ**

1. VARI❋LITE®-Scheinwerfer sind ausschließlich für den Einsatz mit bestimmten Lampentyps. Achten Sie auf den Lampentyp (Philips or Osram HID lamp), bevor Sie die jeweiligen Lampen ersetzen. Die Installation eines anderen Lampentyps kann gefährlich sein.
2. Scheinwerfer können auf jeder beliebigen Oberfläche montiert werden, solange Sie die Montageanweisungen befolgen. Detaillierte Hinweise finden Sie in diesem Handbuch.
3. Beachten Sie die Einhaltung des erforderlichen Sicherheitsabstandes der VARI❋LITE®-Scheinwerfer von brennbarem Material oder beleuchteten Objekten.

**WARNUNG:**
**HINWEISE ZUM SCHUTZ GEGEN ELEKTROSCHOCK**

1. VARI❋LITE®-Scheinwerfer eignen sich ausschließlich für trockene Standorte. Regen oder Feuchtigkeit können die Scheinwerfer beschädigen.
2. Unterbrechen Sie die Stromzufuhr, bevor Sie mit der Arbeit an VARI❋LITE®-Geräten beginnen.
3. Die Geräte sollten nur von qualifiziertem Personal gewartet werden.

**WARNUNG:**
**HINWEISE ZUM SCHUTZ GEGEN ÜBERHÖHTE UV-STRAHLUNG**

1. Viele VARI❋LITE®-Scheinwerfer verwenden die Lampentyp, der UV-Strahlen abgibt. SCHAUEN SIE NICHT direkt in die Lampe.
2. Es ist gefährlich, Leuchten ohne Linsen oder Blenden zu bedienen. Blenden, Linsen oder Ultraviolettschirme müssen ausgetauscht werden, sofern deren Schutzwirkung durch sichtbare Beschädigung (z. B. Sprünge oder Schrammen) eingeschränkt ist.

**WARNUNG:**
**HINWEISE ZUM SCHUTZ GEGEN KÖRPERVERLETZUNGEN**

1. Bei Betrieb sind die Außenflächen der Scheinwerfer heiß. Verwenden Sie bei der Bedienung von aufgeheizter Apparatur die jeweils geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz etc.).
2. Bei Betrieb der Scheinwerfer ist die Lampe heiß. Unterbrechen Sie die Stromzufuhr und lassen Sie die Lampe abkühlen, wenn Sie diese austauschen.
3. Bogenlampen senden ultraviolette Strahlen aus, die Hautverbrennungen und Augenentzündungen verursachen können. Der Betrieb von Bogenlampen erfolgt unter Hochdruck und bei hohen Temperaturen. Sollte die Lampe zerbrechen, besteht die Gefahr von Körperverletzung bzw. von Feuer, das von Lampenteilen ausgelöst werden kann.
4. Tragen Sie beim Austausch der Lampen einen Augenschutz.
5. Die geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz) sollte beim Umgang mit beschädigten Lampen verwendet werden.
6. Wenn die Lampe mit bloßen Händen berührt wird, reinigen Sie sie mit denaturiertem Alkohol und einem flusenfreien Tuch, bevor Sie die Scheinwerfer installieren oder in Betrieb nehmen.
7. Wenn die Lampe beschädigt oder durch Hitzeeinwirkung deformiert ist, muß diese ausgetauscht werden.

**WARNUNG:**
**HF-INTERFERENZ**

1. Es handelt sich um ein Produkt der Klasse A. In einer Wohnumgebung kann das Produkt Hochfrequenzstörungen verursachen. In diesem Fall müssen eventuell geeignete Maßnahmen getroffen werden.

**BESONDERHEITEN VON BOGENLAMPEN**

1. Bogenlampen benötigen eine gewisse Zeitdauer, um nach einem Stromausfall oder einem Spannungsgefälle wieder aufzuleuchten. In einigen Fällen wird die Lampe nach Abkühlung automatisch wieder aufleuchten, je nach der Systemkonfigurationseinstellung des Lampeneinschaltungsstatus.
2. Die Brennposition ist Universal.

# Notes de sécurité

Avant de procéder à l'installation des produits décrits dans ce guide et de les mettre en marche, il est extrêmement important de lire TOUS les renseignements et TOUTES les directives de sécurité contenues dans ce guide ainsi que toute documentation jointe. Tenir compte de tous les avertissements et suivre toutes les précautions pendant l'installation et l'utilisation de cet appareil.

Les symboles de sécurité utilisés dans ce guide sont les suivants :

**ATTENTION** Ce symbole annonce que l'appareil risque d'être endommagé.

**AVERTISSEMENT** Ce symbole annonce qu'il y a risque d'accident grave ou même fatal.

CETTE SECTION CONTIENT DES INFORMATIONS GÉNÉRALES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES , LES INCENDIES, L'EXPOSITION EXCESSIVE AUX RAYONS UV ET TOUT AUTRE ACCIDENT POUVANT ENTRAÎNER DES BLESSURES.

**AVERTISSEMENT:**
**DIRECTIVES POUR SE PROTÉGER CONTRE LES INCENDIES**

1. Les luminaires VARI❋LITE® ont été conçus pour être utilisés uniquement avec certaines type de lampes. Vérifier le type de lampe (Philips or Osram HID lamp) avant de remplacer les lampes. L'installation d'un autre type de lampe peut poser un danger.
2. Les luminaires peuvent être fixés sur tout type de surface tant que les directives de montage sont respectées. Voir les explications détaillées dans ce guide.
3. Vérifier la distance à respecter entre les matériaux combustibles ou les objets illuminés et les luminaires VARI❋LITE®.

**AVERTISSEMENT:**
**DIRECTIVES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES**

1. Les luminaires VARI❋LITE® sont conçus pour une utilisation au sec uniquement. Une exposition à la pluie et à l'humidité risque d'endommager le luminaire.
2. Débrancher l'appareil avant de procéder à la révision de tout matériel VARI❋LITE®.
3. Les révisions doivent être effectuées uniquement par des personnes qualifiées.

**AVERTISSEMENT:**
**DIRECTIVES POUR SE PROTÉGER CONTRE UNE EXPOSITION EXCESSIVE AUX RAYONS UV**

1. Plusieurs luminaires VARI✳LITE® utilisent une lampe qui produit des rayons UV. NE PAS fixer son regard sur la lampe.
2. L'utilisation des luminaires sans lentille ou blindage pose des risques. Tous blindages, lentilles ou écrans ultraviolet visiblement endommagés au point que leur efficacité en est affectée doivent être remplacés, par exemple s'il y a des fissures ou de profondes rayures.

**AVERTISSEMENT:**
**DIRECTIVES POUR SE PROTÉGER CONTRE LES ACCIDENTS POUVANT ENTRAÎNER DES BLESSURES**

1. Les surfaces externes du luminaire deviennent brûlantes quand l'appareil est en marche. Pour manœuvrer ou ajuster des appareils brûlants et leurs composants, se protéger suffisamment (gants, protection pour les yeux, etc.).
2. La lampe du luminaire est brûlante lorqu'il est en marche. Débrancher le courant et attendre que la lampe ait refroidi avant de la remplacer.
3. Les lampes à arc émettent des rayons ultraviolets pouvant causer de graves brûlures sur la peau et une inflammation des yeux. De plus, les lampes à arc fonctionnent sous haute tension à de très hautes températures. Si la lampe se casse, les particules de la lampe cassée peuvent causer blessures et/ou incendie en s'éparpillant.
4. Se protéger les yeux pour remplacer la lampe.
5. Utiliser des appareils de protection appropriés (gants, protection des yeux) pour manier des lampes endommagées.
6. Si la lampe a été touchée avec des mains nues, la nettoyer avec de l'alcool dénaturé et l'essuyer avec un chiffon non-pelucheux avant d'installer ou de brancher le luminaire.
7. Si la lampe a été endommagée ou a reçu une déformation thermique, elle doit être remplacée.

**AVERTISSEMENT:**
**INTERFÉRENCE RF**

1. Cet appareil est de Classe A. Dans un environnement domestique, cet appareil peut causer des interférences radio, et si c'est le cas, l'utilisateur peut avoir à prendre des mesures adéquates.

**CONSIDÉRATIONS DES CARACTÉRISTIQUES DE LAMPES À ARC**

1. Après une interruption de courant ou une baisse importante de voltage, les lampes à arc mettent du temps avant de se rallumer. Dans certains cas, la lampe se rallumera automatiquemet après s'être refroidie. Cela dépend de la manière dont le système est réglé pour le statut de mise en marche de la lampe.
2. La position Brûler est Universelle.

# Aviso sobre Seguridad

Es muy importante leer TODA la información e instrucciones sobre seguridad que se indica en este manual así como en los documentos adjuntos antes de instalar y operar los productos descritos. Se debe prestar atención a todos los avisos y advertencias durante la instalación y uso de este producto.

Los símbolos de seguridad usados en este manual son los siguientes:

**CUIDADO**, indica posibles daños al producto.

**ADVERTENCIA**, indica posibles lesiones o muerte a las personas.

LA INFORMACIÓN GENERAL RELACIONADA A LA PROTECCIÓN CONTRAGOLPES DE CORRIENTE ELÉCTRICA, INCENDIO, EXPOSICIÓN EXCESIVA A RADIACIÓN ULTRA VIOLETA Y LESIONES A LAS PERSONAS SE PUEDE ENCONTRAR SEGUIDAMENTE:

**ADVERTENCIA:**
**INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA INCENDIO**

1. Las luminarias VARI❋LITE® han sido diseñadas para ser usadas solamente con algunas lámparas. Tome nota del tipo de lámpara (Philips or Osram HID lamp) antes de reemplazarla. Instalación de otro tipo de lámpara puede ser peligroso.
2. Las luminarias se pueden instalar en cualquier tipo de superficie siempre que se sigan las instrucciones de instalación. Vea las instrucciones detalladas en este manual.
3. Tome nota de los requerimientos de distancia de materiales combustibles u objetos iluminados para las luminarias VARI❋LITE®.

**ADVERTENCIA:**
**INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA CHOQUE ELÉCTRICO**

1. Las luminarias VARI❋LITE® están diseñadas solamente para lugares secos. La exposición a la lluvia o humedad pueden dañar la luminaria.
2. Desconecte la energía antes de dar servicio a cualquier equipo de VARI❋LITE®.
3. El servicio debe ser realizado solamente por personal calificado.

**ADVERTENCIA:**
**INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA LA EXPOSICIÓN EXCESIVA DE RADIACIÓN ULTRA VIOLETA**

1. Muchas luminarias VARI✻LITE® usan un tipo de lámpara que produce radiación UV. NO mire directamente a la lámpara.
2. Es peligroso operar luminarias sin lentes o protectores. Debe cambiar los protectores, lentes o pantallas ultravioletas si se aprecia que han sido dañadas, y que su efectividad pudiera estar deteriorada. Por ejemplo, si tuvieran rajaduras o raspaduras profundas.

**ADVERTENCIA:**
**INSTRUCCIONES PARA PROTECCIÓN CONTRA LESIONES DE PERSONAS**

1. Las superficies exteriores de las luminarias están calientes durante su operación. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando haga ajustes en el equipo y componentes que están calientes.
2. Cuando las luminarias están en operación la lámpara estará muy caliente. Desconecte la energía y deje que la lámpara se enfríe antes de reemplazarla.
3. Las lámparas de arco emiten radiaciones ultravioletas que pueden ocasionar serias quemaduras a la piel e inflamación a los ojos. Además, las lámparas de arco operan a alta presión y muy alta temperatura. Si la lámpara se rompe, puede existir el peligro de lesiones al personal o un incendio ocasionado por las partículas de la lámpara rota que se caen.
4. Use protección para los ojos cuando vuelve a colocar una lámpara nueva.
5. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando trabaje con lámparas dañadas.
6. Si toca la lámpara con las manos, limpie la lámpara con alcohol desnaturalizado y con tela sin pelusas antes de instalar o volver a conectar la luminaria.
7. Cambie la lámpara si está dañada o deformada termicamente.

**ADVERTENCIA:**
**INTERFERENCIA RF**

1. Este es un producto de Clase A. En el ambiente de la casa este producto puede ocasionar radiointerferencia, en cuyo caso, el usuario debe tomar las medidas adecuadas.

**CONSIDERACIONES SOBRE LAS CARACTERÍSTICAS DE LA LÁMPARA DE ARCO**

1. Las lámparas de arco requieren un período de tiempo para volver a iluminarse después de una interrupción de energía o de una severa caída de voltaje. En algunos casos, la lámpara se volverá a iluminar en forma automática después que se ha enfriado dependiendo de la configuración del sistema de energía de la lámpara.
2. La posición de encendido es universal.

# 安全性に関する注意事項

ここに記載されている製品を取り扱う場合は、まず本マニュアルおよび付属のマニュアルの安全性に関する情報と説明をすべてお読みください。また、実際に本製品を取り付けたり使用する際には、すべての注意事項および警告に留意して作業してください。

本マニュアルでは、以下の安全マークを使用しています。



注意：製品に損傷を与える危険性があります。



警告：人身事故につながる危険性があります。

感電、火災、UV 放射に対する過度の露出、および人身事故を防ぐための一般的な情報については、以下の説明をお読みください。

警告：
火災の発生を防ぐためのヒント

1. VARI*LITE®照明器具は､ランプを使用するように設計されています。ランプを交換する際は、ランプの種類 ( など) を確認するようにしてください。他の種類のランプを取り付けると危険です。
2. 照明器具は、本マニュアルの指示に従って操作するかぎり、どのようなタイプの表面にでも取り付けることができます。詳細については、本マニュアルを参照してください。
3. ヒューズを交換する場合は、同じヒューズ（同じ種類、同じクラス）を使用してください。
4. VARI*LITE® 照明器具は、可燃性物質または他の光源から必要な距離だけ離して配置してください。

警告：
感電を防ぐためのヒント

1. VARI*LITE® 照明器具は、乾燥した環境で使用するように設計されています。雨で濡れる場所や湿気の多い場所に取り付けると、照明器具が傷むことがあります。
2. VARI*LITE® 照明器具を修理点検する場合は、必ず先に電源を切ってください。
3. 照明器具の修理点検は、資格を持つ技師のみが行うようにしてください。

**警告：**

過度の **UV** 放射にさらされないためのヒント

1. VARI*LITE® 照明器具の多くは、UV 放射を生ずる HID タイプのランプを使用しています。ランプを直視することは避けてください。
2. レンズまたはシールドを使わずに照明器具を点灯すると危険です。レンズ、シールド、紫外線画面は、ひび割れや深い引っかき傷などにより、その効力が損なわれるようになったら取り替えるようにします。

**警告：**

人身事故を防ぐためのヒント

1. 照明器具が点灯しているときは、その外側が熱くなります。熱くなった器具やコンポーネントを取り扱う際には、適切な防具（手袋や保護用眼鏡）を使用してください。
2. 照明器具が点灯しているときは、そのランプが熱くなります。ランプを交換する場合は、照明器具の電源を切り、ランプの温度が下がるまで待ってください。ランプの裏ぶたをあけると、遮断スイッチが働いて、ランプの電源が切れる場合があります。
3. アーク灯は紫外線を放射します。この紫外線によって、ひどい火傷を負ったり、目の炎症を起こすことがあります。さらに、アーク灯は、高圧高温の状態で光を発します。そのため、万一アーク灯が破損すると、飛び散った破片で人身事故や火災が発生する危険性があります。
4. 再点灯するときには、保護用眼鏡を着用してください。
5. 損傷したランプを取り扱う場合は、適切な防具（手袋や保護用眼鏡）を着用してください。
6. 手袋を着用せずに直接手でランプを触った場合は、変性アルコールを使ってランプをきれいにし、糸くずの出ない布で拭いてから照明器具を取り付け、電源を入れるようにします。
7. 傷がついたランプや熱によって変形したランプは取り替えてください。

**警告：**

**RF** 干渉

1. 本製品は Class A に分類されます。本製品は、家庭環境において無線干渉を起こす可能性があります。その場合、使用者は適切な処置を取らなければならないことがあります。

アーク灯の特性

1. 停電後または大きな電圧ディップ後にアーク灯を再点灯する場合は、しばらく時間をおくようにしてください。Lamp Power-Up State）シ
ステム設定によっては、温度が下がったときに自動的に再点灯される場合もあります。
2. アーク灯は点光源です。

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# Introduction

## About This Manual

This manual provides necessary information regarding safety, installation, operation and routine maintenance for the VARI✻LITE® VL2500™ Spot Luminaire. Familiarizing yourself with this information will help you to get the most out of your product.

**WARNING:** It is important to read ALL accompanying safety and installation instructions to avoid damage to the product and potential injury to yourself or others.

This manual covers the following models:

| Model | Part Number | Source |
|---|---|---|
| VL2500™ Spot Luminaire | 20.9676.0001 | Arc |

## Additional Documentation

A service manual for extended maintenance of the VL2500 spot luminaire is available in both printed and electronic (PDF) formats:

- VL2500 Spot Luminaire Service Manual (02.9676.0020)
  - Testing, Troubleshooting, Component Replacement and Illustrated Parts Breakdown.

**Note:** Performing maintenance procedures may void the product warranty. Refer to the Vari-Lite Limited Warranty card included in the product shipping package for more information.

For more information regarding DMX512 systems, refer to the following document available from United States Institute for Theatre Technology, Inc. (USITT):

- Digital Data Transmission Standard for Dimmers & Controllers plus AMX 192 Analog Multiplex Data Transmission Standard for Dimmers & Controllers. (A copy of Recommended Practice for DMX512 is included.)

  USITT Inc.
  6443 Ridings Road
  Syracuse, New York 13206-1111 USA
  Tel: (800) 938-7488  Fax: (866) 398-7488 / www.usitt.org

## Text Conventions

The following styles and meanings are used throughout this manual:

| Style | Meaning |
|---|---|
| [Button] | Front panel button. Example: Press [Menu]. |
| [Up] / [Down] arrows | Press either [Up] or [Down] arrow button at Menu Display. |
| MENU | LCD Menu Display read-out. Example: Press [Up] / [Down] arrows until LAMP appears. |

## Customer Service

### Our Goal

At Vari-Lite, we are committed to providing you the highest quality in customer service. Our comprehensive resources are available to help your business succeed and ensure you get the full benefit of being a Vari-Lite customer. Whether your needs are telephone troubleshooting assistance, product training or technical service, our full-time staff of experienced professionals are on-hand to provide support.

### How to Reach Us

For assistance in your area, call the dealer from which your product was purchased.

*or*

Contact an Authorized Service Center.

*or*

Contact the Vari-Lite Customer Service Department, 9am -6pm CST Monday through Friday, at the following:

phone: 1-877-VARI-LITE (1-877-827-4548) or +1-214-647-7880
email: customerservice@genlyte.com

### Additional Resources

For additional resources and documentation, please visit our website at www.vari-lite.com and follow the Support link.

*CHAPTER 1.*

# Description

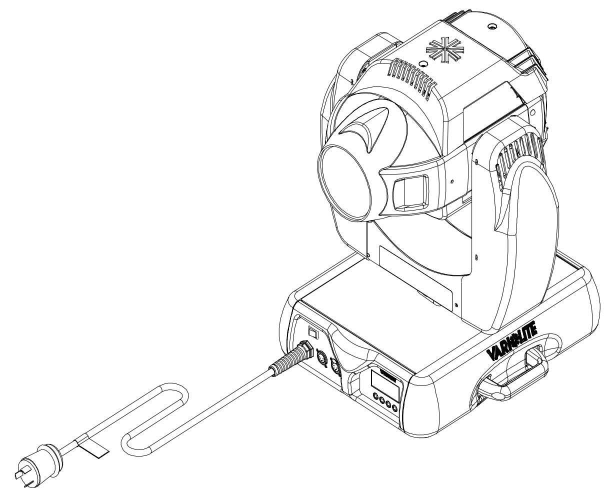
This chapter contains descriptions of luminaire features and components, along with a list of accessories which are available.

- **Features**
- **Components**

# Features

## Overview

The VL2500 spot luminaire contains the following standard features:




- CYM color mixing system.
- Variable beam focus to soften the edges of gobos or spots and enable gobo morphing.
- Full field dimmer to allow smooth timed fades and fast blackouts.
- A mechanical iris which provides continuous beam size control for both rapid beam size changes and smooth timed beam angle changes.
- Rotatable gobo wheel which contains five individually rotatable, indexable gobos.
- Two, 12-position wheels, each providing 11 easily loaded positions (and 1 open) for interchangeable dichroic color and gobo selections.
- Dual blade strobe system.
- Zoom optics system with a zoom angle of 2.8 to 1.
- Power factor corrected arc power supply for a Philips arc lamp.
- 700 watt arc source.
- Faceted reflector designed for an optimal flat field.
- Control by DMX512 protocol.
- Two truss hook brackets for versatile hanging configurations.

# Components

## Included Items

The following illustration shows all items included with the luminaire:

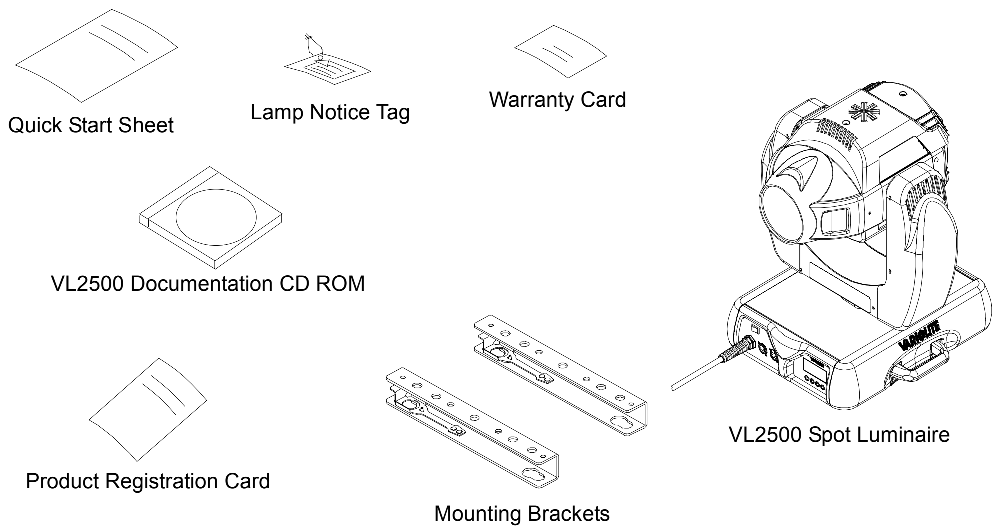



**Figure 1-1: VL2500 Spot Luminaire Packing List**

## Replacement Items/Accessories

The following optional and/or replacement items can be ordered directly from Vari-Lite. (Please order by Vari-Lite part number.)

| Vari-Lite Part No. | Accessory |
|---|---|
| 22.9620.0194 | Safety Cable Assembly |
| 25.9661.0057 | DMX Termination Connector Assembly |
| 28.9661.0054 | Luminaire Programming (XLR5) Kit |
| 41.6006.0390 | CTO (Color Temperature Orange) for fixed color wheel |
| 55.6841.0001 | Mega Claw Truss Hook, 2" Round |
| 55.6840.0001 | Mega Clamp Truss Hook, Round and Square |
| 71.2528.0700 | 700 Watt Short-Arc Lamp |

# VL2500 Spot

The following illustration shows the major luminaire components and controls.

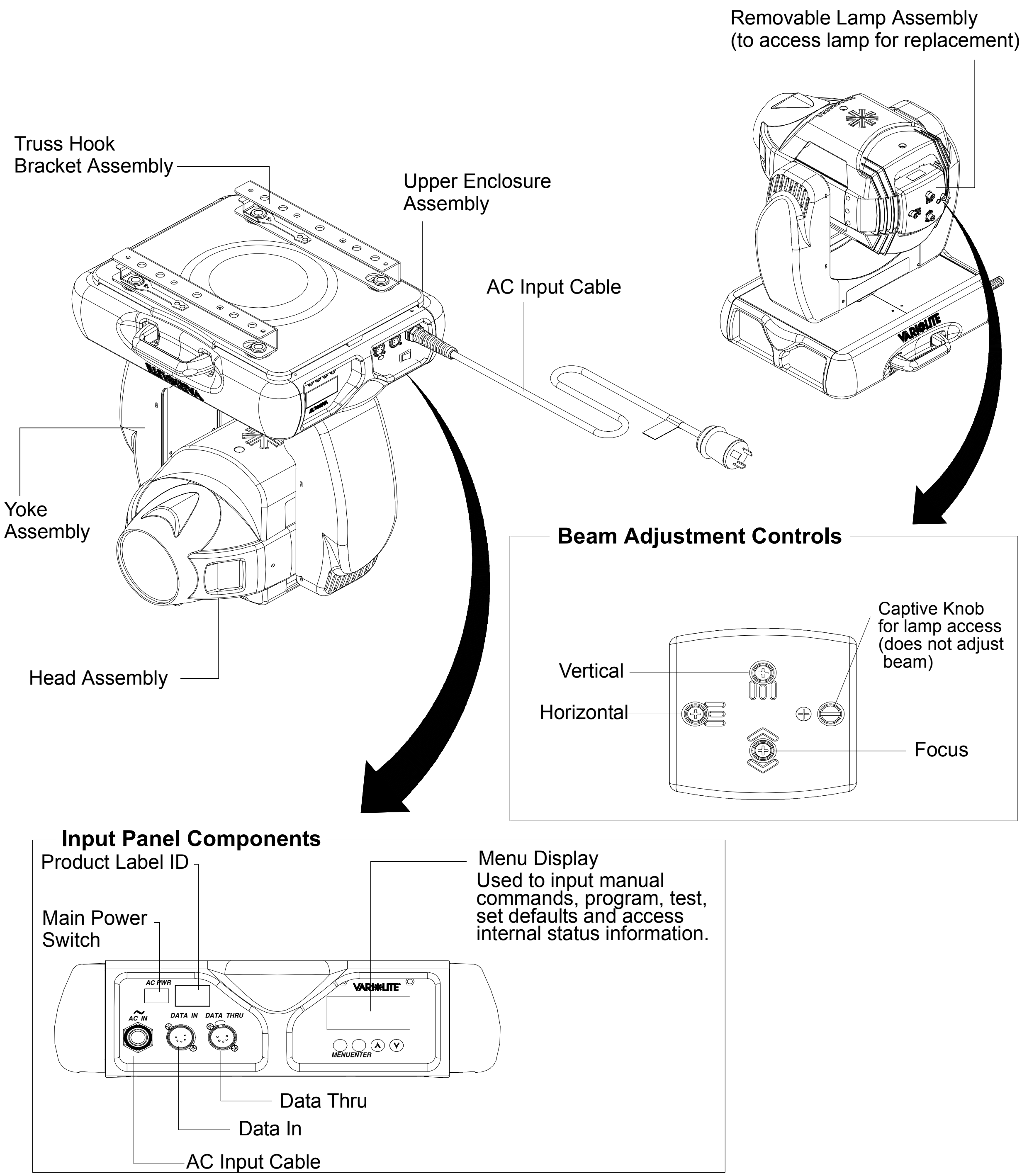



**Figure 1-2: External Components and Controls**

# CHAPTER 2.

## Installation

This chapter contains instructions for installation of the luminaire. It includes connecting power and data, along with instructions for powering up the luminaire for the first time and addressing it within your system.

- **Power and Data Cabling Requirements**
- **Installation Procedures**
- **Powering Up**
- **Addressing**

# Power and Data Cabling Requirements

## Power

The luminaire requires standard AC power distribution from 100-240 VAC, 50/60 Hz. Three amps to twelve amps will be required depending on the AC supply voltage and product model.

Depending on the application, the luminaire's AC input cable may require a different connector. If required, install a new connector meeting your requirements using the following wire color code reference:

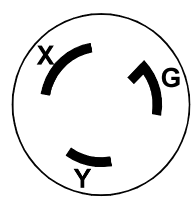
| Wire* | Connection |
|---|---|
| Green/Yellow | AC Ground |
| Blue | AC Neutral |
| Brown | AC Line |

* International (Harmonized) Standard

**WARNING:** DO NOT connect to three-phase service in countries with 240 volt power.

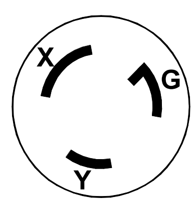
For single-phase power at 100 to 240 volts RMS:

| Connection | Pin |
|---|---|
| AC Neutral | X |
| AC Line | Y |
| Ground (Earth) | G |




For three-phase power at 208 volts RMS:

| Connection | Pin |
|---|---|
| Phase 1 | X |
| Phase 2 | Y |
| Ground (Earth) | G |



## Current vs. Voltage

The following table provides the luminaire's current draw at specific voltages. Current is calculated with the lamp on and all motors sequencing.

**Table 2-1: Current vs. Voltage**

| Voltage @ 60Hz | Current |
|---|---|
| 100.0 | 10.6 |
| 110.0 | 9.5 |
| 120.0 | 8.5 |
| 130.0 | 7.9 |
| 140.0 | 7.2 |
| | |
| 180.0 | 5.5 |
| 190.0 | 5.2 |
| 200.0 | 4.9 |
| 210.0 | 4.7 |
| 220.0 | 4.5 |
| 230.0 | 4.3 |
| 240.0 | 4.1 |

# Data Cables

The luminaire is equipped with two, 5-pin XLR connectors for DATA IN and DATA THRU (out) applications. DATA IN requires a 5-pin, female XLR connector and DATA THRU requires a 5-pin, male XLR connector. When purchasing or constructing data cables, it is important that not only the correct cable type be used, but also quality cable to ensure a reliable DMX512 system. Your cabling should meet the following USITT DMX specification requirements:

- Suitable for use with EIA485 (RS485) operation at 250k baud.
- Characteristic impedance 85-150 ohms, nominally 120 ohms.
- Low capacitance.
- Two twisted pairs.
- Foil and braid shielded.
- 24 AWG min. gauge for runs up to 1000 feet (300m).
- 22 AWG min. gauge for runs up to 1640 feet (500m).

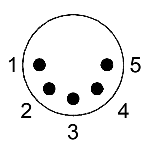
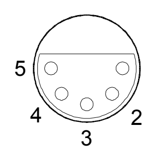
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**Note:** Microphone type cables and other general purpose, two-core audio or signal cables are not suitable for use with DMX512.

---

Refer to the USITT Recommended Practice for DMX512 guide for additional information regarding DMX512 systems. How to obtain a copy is detailed in "Additional Documentation" on page 1.

The XLR 5-pin connectors should be wired as follows:

| Pin/Wire Code to XLR Connectors | | | | | | |
|---|---|---|---|---|---|---|
| Data Thru Cable Pinout<br><br>Male Conn | **Pin 1**<br>Foil & Braided Shield | **Pin 2**<br>1st conductor of 1st twisted pair<br>Data (-) | **Pin 3**<br>2nd conductor of 1st twisted pair<br>Data (+) | **Pin 4**<br>1st conductor of 2nd twisted pair<br>Data (-) | **Pin 5**<br>2nd conductor of 2nd twisted pair<br>Data (+) | Data In Cable Pinout<br><br>Female Conn |

## Recommended Cable Types/Manufacturers

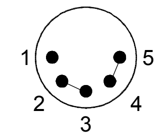
These are only a few of the suitable cable types. Any quality EIA485, twisted pair, 120 ohm, shielded cable will also work.

| Type | Pairs | ZΩ* | Jacket | AWG | Use | Temp (F) |
|---|---|---|---|---|---|---|
| **Belden Cables** | | | | | | |
| 1215A | 2 | 150 | PVC | 26 | IBM Type 6 Office cable | 75 |
| 1269A | 2 | 100 | PTFE | 22 (Solid) | High Temp, Plenum cable | 200 |
| 8102 | 2 | 100 | PVC | 24 | UL2919 | 80 |
| 8132 | 2 | 120 | PVC | 28 | UL2919 | 80 |
| 8162 | 2 | 100 | PVC | 24 | UL2493 | 60 |
| 82729 | 2 | 100 | PTFE | 24 | High Temp, Plenum cable | 200 |
| 88102 | 2 | 100 | PTFE | 24 | High Temp, Plenum cable | 200 |
| 89696 | 2 | 100 | PTFE | 22 | High Temp, Plenum cable | 200 |
| 89729 | 2 | 100 | PTFE | 24 | High Temp, Plenum cable | 200 |
| 89855 | 2 | 100 | PTFE | 22 | High Temp, Plenum cable | 200 |
| 9729 | 2 | 100 | PVC | 24 | UL2493 | 60 |
| 9804 | 2 | 100 | PVC | 28 | UL2960 | 60 |
| 9829 | 2 | 100 | PVC | 24 | UL2919 | 80 |
| 9842 | 2 | 120 | PVC | 24 | UL2919 | 80 |
| **Proplex Cables** | | | | | | |
| PC224P | 2 | 110 | Polyurethane | 22 | Heavy Duty and Portable | 105 |
| PC224T | 2 | 110 | PVC | 22 | UL2464 | 105 |
| PC226T | 3 | 110 | PVC | 22 | UL2464 | |

* Characteristic Impedance

## Termination Connector

A XLR termination connector is required at the last luminaire (or "far end of the line") to prevent signal reflections. Signal reflections may cancel out the signal at certain line lengths, resulting in errors. The terminator is also necessary for software downloads and running tests on multiple luminaires. To construct your own connector, you will need the following components:




*Solder resistors across pins 2 & 3, and 4 & 5*

- 5-pin, male XLR connector.
- Two 1/4W 5% 120 ohm resistors.

**Note:** A male termination connector is available as an accessory from Vari-Lite. See "Replacement Items/Accessories" on page 5.

# Installation Procedures

## Installing Lamp

In the event the lamp was packed separately during shipment, it will be necessary to install in the luminaire before use.

**WARNING:** Ensure that power is removed from luminaire when installing lamp.

**CAUTION:** Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use alcohol and cotton cloth to thoroughly clean glass portion of lamp.

**To install lamp:**

Step 1. Ensure power is removed from luminaire.

Step 2. Remove lamp from shipping box.

Step 3. At backcap, using slotted screwdriver (or fingers) turn captive knob until loose.

Step 4. Slide backcap away from head assembly (it will remain attached by tether and lamp wires.).

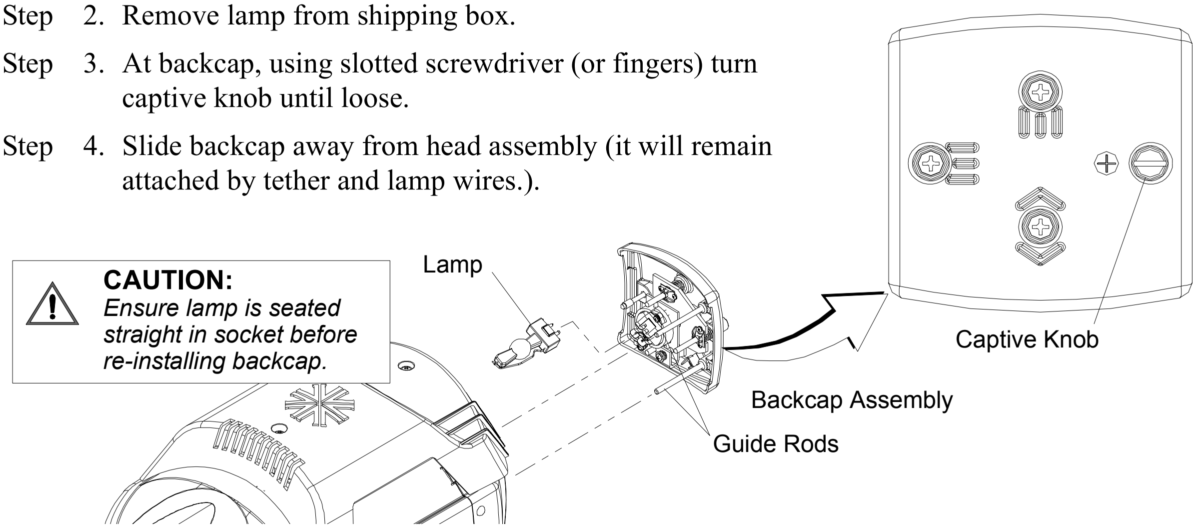



**Figure 2-1: Installing Lamp**

Step 5. Install lamp by pressing into socket. Ensure lamp is fully seated in socket and parallel to guide rods. (Lamp can be damaged when inserted through reflector if not parallel to guide rods.)

Step 6. Align guide rods in guide holes and slide backcap into head assembly. Re-tighten captive knob.

**Note:** After installing a new lamp, it is necessary to adjust the beam for optimum performance. This procedure is covered in “Powering Up” on page 18.

# Hanging the Luminaire

The VL2500 spot luminaire can be hung horizontally or vertically from any structure designed to work with the type of load created by this moving luminaire. Two mounting bracket assemblies (provided) are used to attach truss hooks or other mounting hardware as required. Many compatible truss hooks are available from different manufacturers for your particular needs.

A minimum of one hook per truss hook bracket is required. If mounting method does not use truss hooks, two attachment points per truss hook bracket are required. When attaching more than one point on a single bracket, the attach points must be spaced as far apart as possible using the supplied mounting holes.

**Install mounting hardware and brackets:**

Step 1. Install truss hooks on two provided truss hook brackets as required.

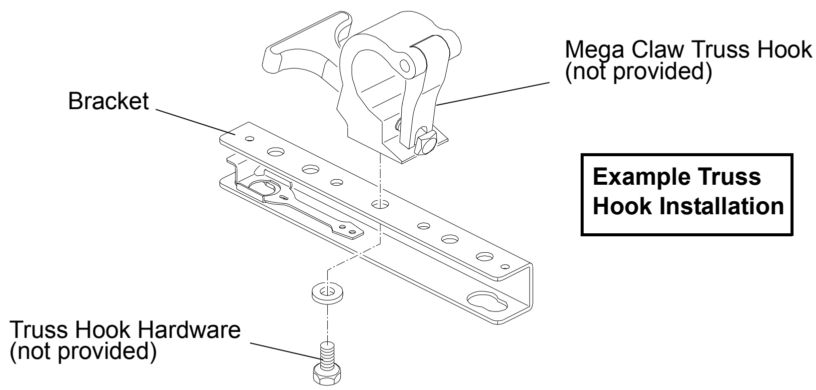



**Figure 2-2: Installing Truss Hooks**

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**Note:** Various types of truss hooks can be used. The Mega Claw truss hook (as shown in the example above) as well as many other standard hooks, can be ordered separately.

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Step 2. Determine required configuration of bracket installation. Brackets may be installed in either orientation as shown.

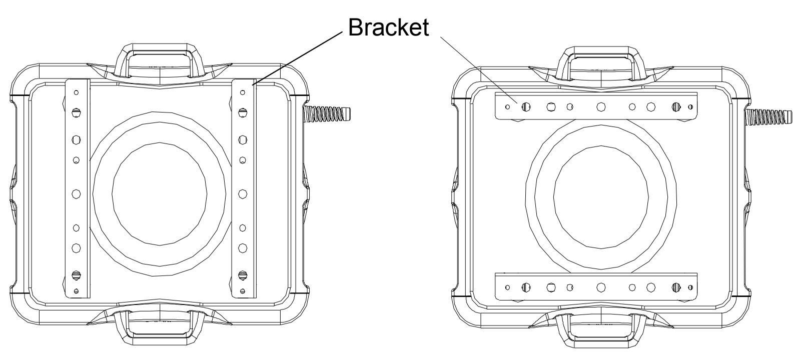



**Figure 2-3: Bracket Orientation Options**

Step 3. While pulling up on locking mechanism release, fit keyed holes onto raised mounting buttons at bottom of enclosure. Slide forward and release locking mechanism to lock in place. Ensure brackets are locked securely. (Always face brackets in same direction as shown.)

**WARNING:** Ensure that the bracket locking mechanism is fully seated after the bracket is installed on the luminaire.

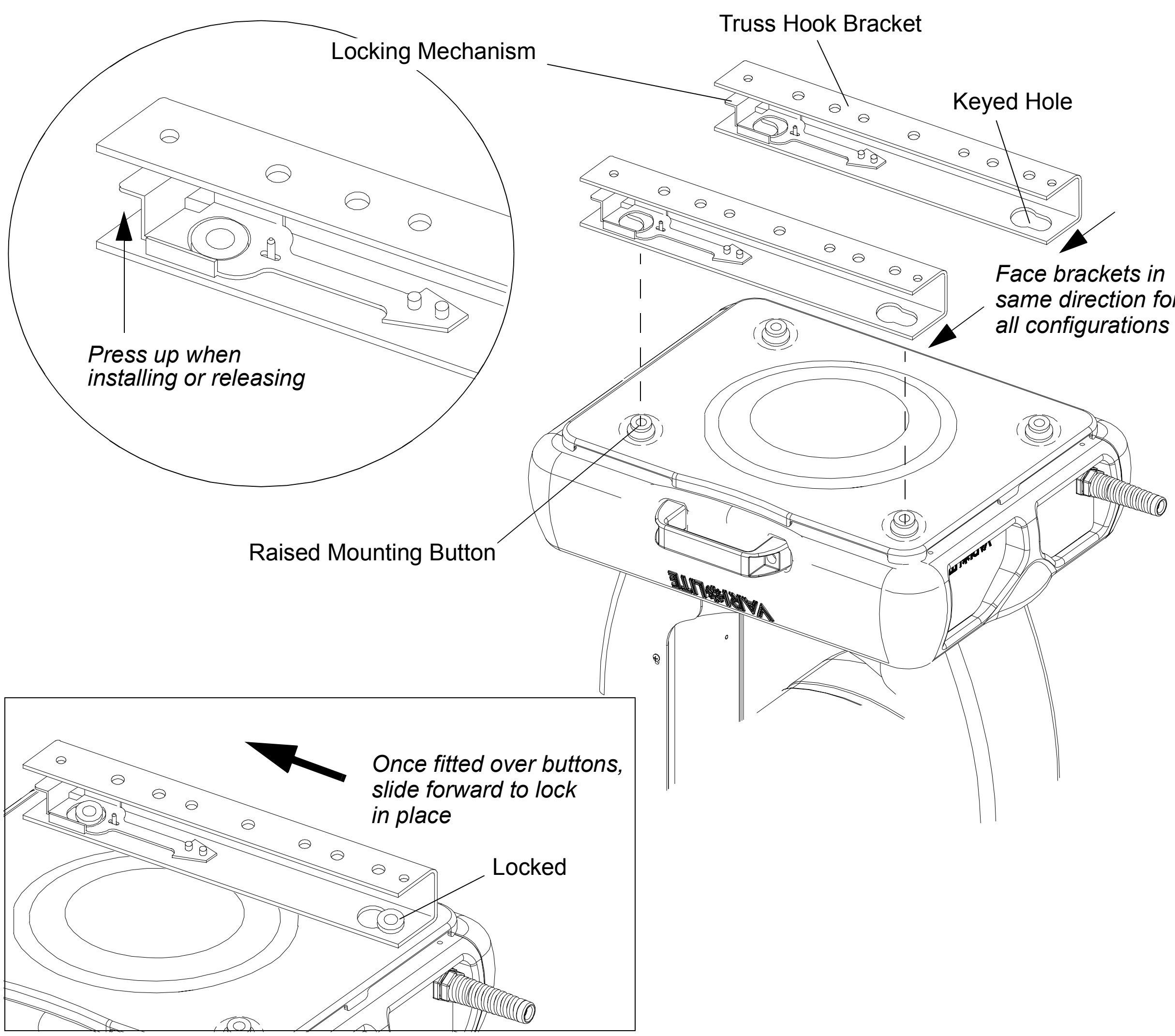



**Figure 2-4: Installing Brackets on Luminaire Enclosure**

**Installing in Truss:**

Step 1. Using two people, lift luminaire into mounting position.

Step 2. Secure in place with truss hook. Ensure truss hook hardware that locks hook in place (e.g. wing bolt) is properly tightened and that luminaire is fully supported.

Step 3. Attach safety cable (as required) as follows:

a. Connect one end of cable to luminaire handle.

b. Loop at least once around truss/pipe and attach other end of cable to other handle.

Step 4. Connect power and data cables according to procedure given in "Connecting Data and Power" on page 17.

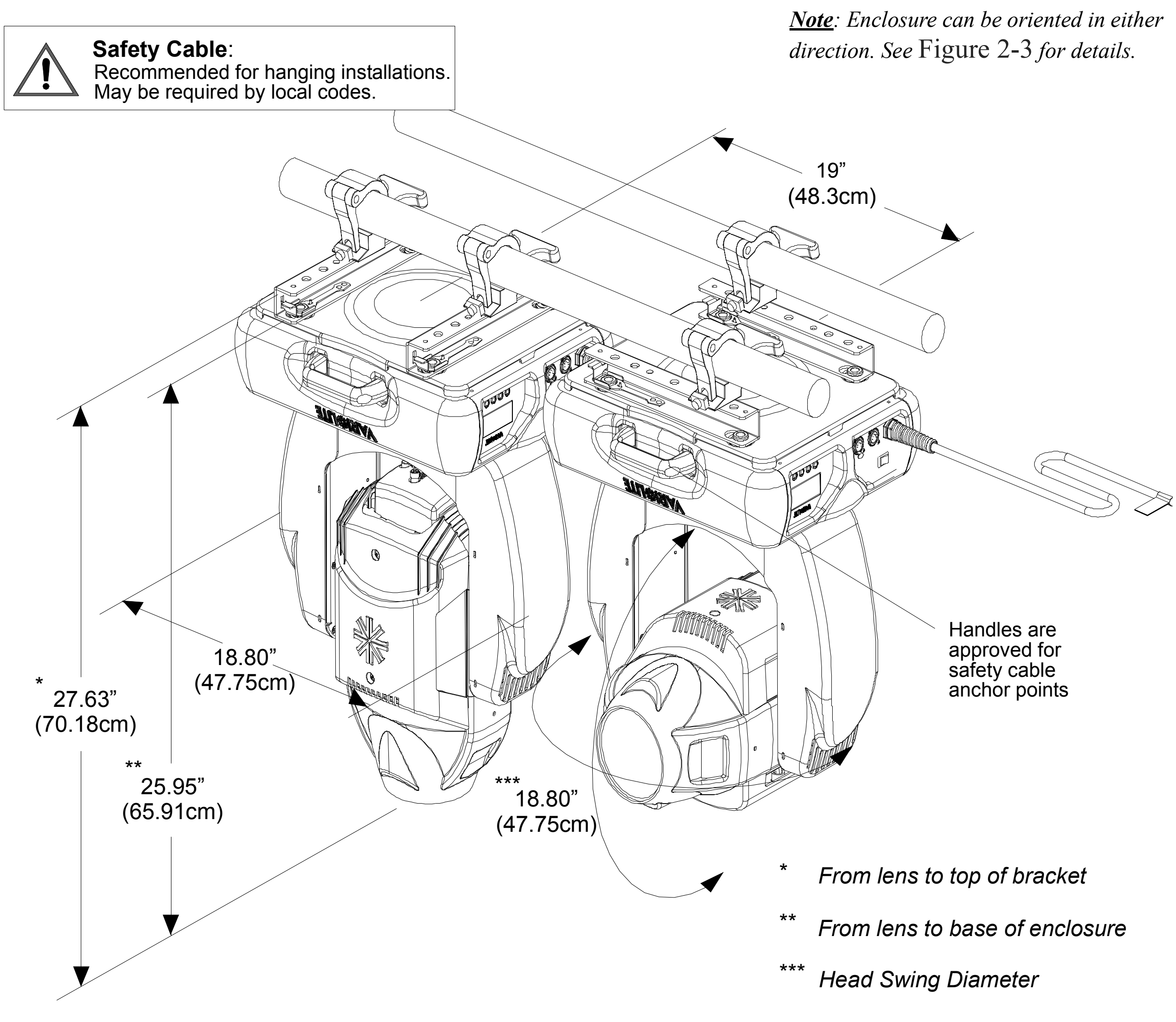



**Figure 2-5: Hanging Dimensions and Clearances**

# Floor Mounting the Luminaire

The luminaire enclosure is sufficient to stabilize the luminaire in a floor installation, provided that the mounting surface is flat and sturdy. Be sure to leave enough space around the base (enclosure) of the luminaire to allow proper, uninterrupted airflow for cooling.

# Connecting Data and Power

A maximum of 32 luminaires may be connected in any one DMX data link.

**Note:** This maximum limit applies to the luminaire "daisy chain" only. Your system or console may require fewer luminaires on a single data link path. Consult your console documentation for more information.

**To connect power and data:**

Step 1. Connect data cable from console to first luminaire in chain at DATA IN connector.

Step 2. If required, connect additional data cables from DATA THRU connectors to DATA IN connectors of remaining luminaires in link.

Step 3. At last luminaire in link, install male termination connector at DATA THRU connector. (Luminaires and other devices on the same DMX chain may not function properly without termination.)

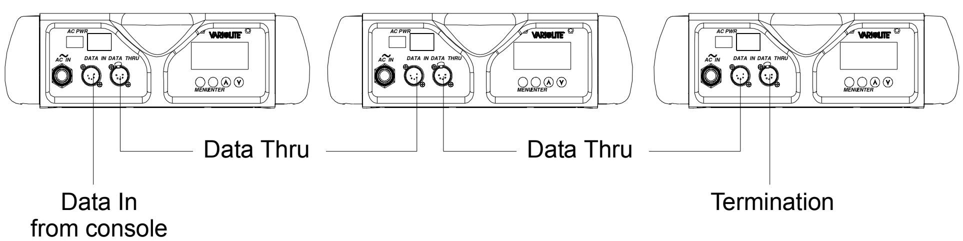



**Figure 2-6: Data Link**

Step 4. Connect AC Input Cable connector to power input source.

Step 5. Dress AC input and data cables and secure them so that they will not interfere with luminaire head and yoke movement.

# Powering Up

## Power-Up Procedure

Since Lamp On is the default state, the lamp will strike when the luminaire is powered up for the first time. When AC power is applied, the luminaire will immediately begin a calibration sequence that steps it through full pan and tilt movements. The internal color, gobo, and beam mechanisms will also move through a full range of motion. After calibration, the luminaire head will either stop at its "home" position (which positions the pan axis at mid-rotation and the head parallel to the yoke with the lens pointing away from the luminaire upper enclosure) or move to its current DMX-defined position if DMX data is present. All internal mechanisms also move to their "home" or DMX-defined positions.

Subsequently, depending on the luminaire's setting for Lamp Power-Up State (refer to "Menu System Functions" on page 53), when power is applied, the arc lamp will either **a)** "strike" or ignite - Lamp On (*default)*, **b)** await calibration and then strike - Cal On, or **c)** await manual command to strike - Lamp Off.

⚠ **CAUTION:** Before applying power, be sure the luminaire is hung or positioned so that the head and yoke can move freely without restriction.

**To power up:**

Step 1. At each luminaire, apply power by switching power switch to "I" (ON) position. Luminaire will automatically step through following procedure:

a. If Lamp Power-Up State is set to Lamp On, lamp will strike (ignite).

b. Luminaire will cycle through calibration and stop at "home" position.

c. If Lamp Power-Up State is set to Cal On, lamp will strike (ignite) at end of calibration sequence.

# Align Lamp for Flat Field

The design of the VL2500 spot luminaire optical system is based on a flat field. A flat field is one where there is no detectable hot spot.

After a new lamp is installed, it will be necessary to align the lamp to optimize the beam for the flat field. Knobs located at the luminaire's backcap will allow adjustment.

**WARNING:** Backcap and adjustment knobs will be HOT during lamp operation. Wear gloves and/or use tools to prevent burns.

**To align lamp:**

Step 1. Using internal menus select Lamp test to set beam. See "Menu System Functions" on page 53 for more information. (If using console, set intensity to 100%, open beam size iris and focus for hard edge.)

Step 2. Position beam on a white wall at a distance of 10' to 20'.

Step 3. At backcap, using Vertical and Horizontal knobs, adjust hot spot to center of beam.

Step 4. Using Focus knob, adjust beam for best spot.

**Note:** During this test, the pan and tilt functions of the luminaire are temporarily disabled to allow manual movement of the luminaire head. Pan and tilt functions will be restored when the test is exited.

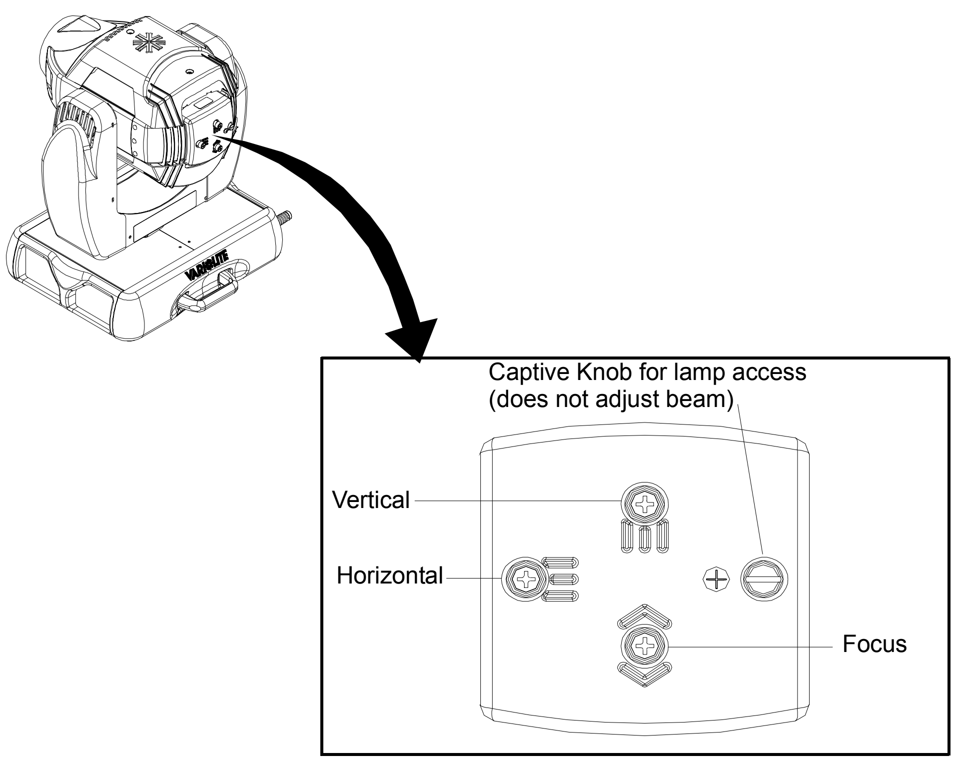



**Figure 2-7: Lamp Alignment Controls**

# Addressing

## Program Starting Address

The address setting for DMX console controlled systems is entered using the Menu Display (refer to "Menu Operation" on page 50). The luminaire retains the DMX address even if power is removed.

**Note:** Refer to your console operating instructions for specific information regarding its addressing requirements.

**Program a DMX starting address:**

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Address appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows to scroll to starting address.

Step 4. Press [Enter] to set.

## Program Starting Address Without Calibrating Luminaire

It is possible to bypass the calibration sequence and go directly to the Menu Display programming in order to pre-program an address setting.

**Program starting address without calibrating luminaire:**

- While powering up luminaire, press and hold [Menu].
- When display changes from "Starting" to the DMX address, program address as in Program Starting Address above.

**Note:** The luminaire will require a reset to restore control.

# CHAPTER 3.

# Operation

This chapter contains instructions for operating the luminaire using DMX control and for updating the internal software.

- **Color/Gobo Control**
- **DMX Operation**
- **DMX Mapping**
- **Luminaire Timing**
- **Updating Software**

# Color/Gobo Control

The VL2500 Spot Luminaire's color system is composed of a CYM color mixing mechanism and a fixed color wheel. The following sections describe these components.

## CYM Crossfade Color Mixing and Dimmer

The color mixing mechanism is made up of three graduated color disks: Cyan, Yellow, and Magenta (CYM). These disks provide full-spectrum color crossfades from pastel to saturated colors. Also included on the color mixing bulkhead is a graduated glass dimmer wheel for smooth time-controlled fades from full light output to absolute black.

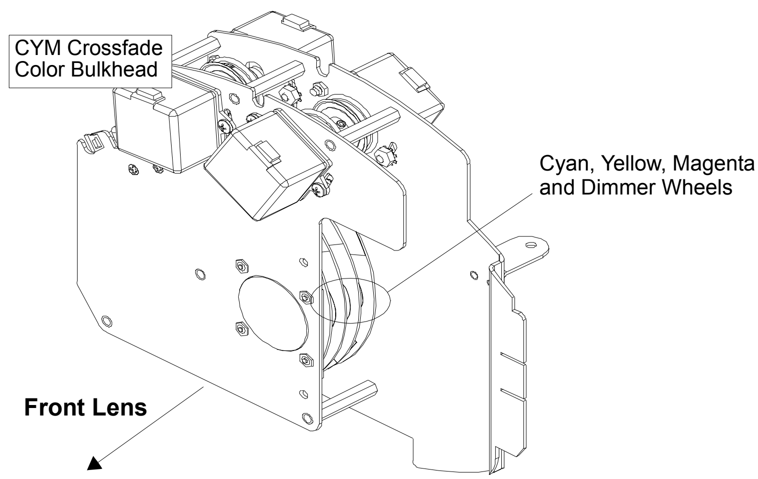



**Figure 3-1: CYM and Dimmer Bulkhead**

## Color/Gobo Wheel Positions

The standard configurations for color and fixed gobo wheels are: all color filters installed on Wheel 1 (wheel nearest lamp) and all gobos installed on Wheel 2 (wheel nearer to front lens). These wheels each have 12 positions, one being open.

All rotating gobos are installed on the Rotating Gobo Wheel (nearest to front lens). This wheel has six positions, one being open.

Color and gobo wheels offer partial frame control and various spin rates in either direction.

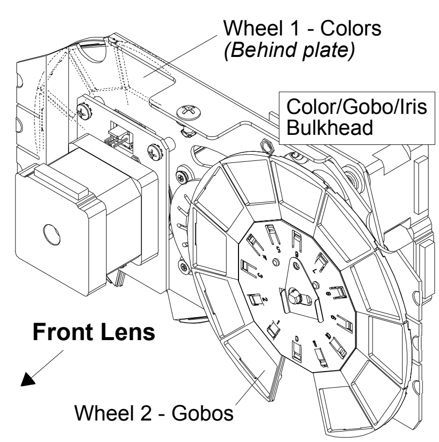



**Figure 3-2: Color/Gobo Bulkhead**

> **NOTE**: Users of VARI✻LITE luminaires should not install or use metal gobos. The use of metal gobos in any VARI✻LITE product may damage the luminaire and could void the luminaire's warranty.

# Standard Colors and Gobos

The following illustrations show the color and gobo standard configurations.

### Standard Colors - Wheel 1 (Color Wheel)

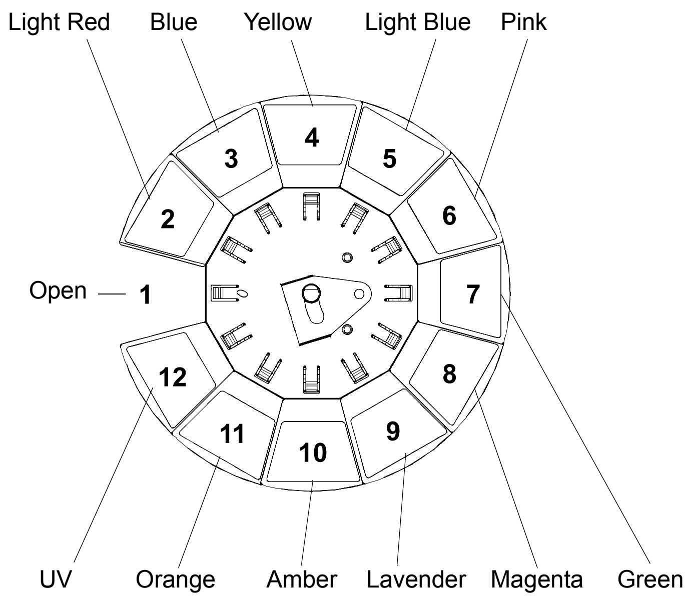



**Figure 3-3: Standard Colors - Fixed Color Wheel**

**Table 3-1: Standard Color Fixed Color Wheel Part Numbers**

| Position | Color Filter | Part Number |
|---|---|---|
| 1 | OPEN | N/A |
| 2 | Light Red | 41.6006.0240 |
| 3 | Blue | 41.6006.0850 |
| 4 | Yellow | 41.6006.0540 |
| 5 | Light Blue | 41.6006.0820 |
| 6 | Pink | 41.6006.0150 |
| 7 | Green | 41.6006.0660 |
| 8 | Magenta | 41.6006.0020 |
| 9 | Lavender | 41.6006.0960 |
| 10 | Amber | 41.6006.0320 |
| 11 | Orange | 41.6006.0440 |
| 12 | UV | 41.6006.0990 |

**Standard Gobos - Wheel 2 (Fixed Gobo Wheel)**

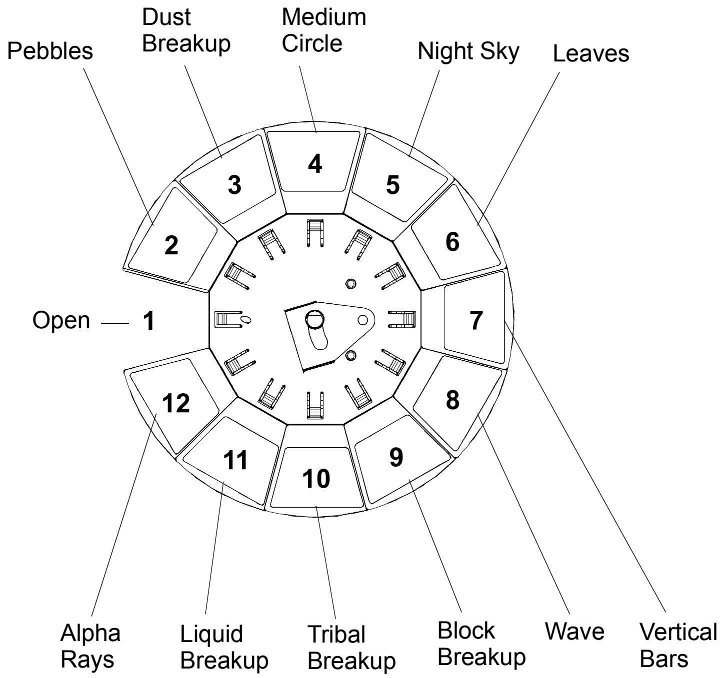



**Figure 3-4: Standard Gobos - Fixed Gobo Wheel**

**Table 3-2: Standard Gobos (Fixed Gobo Wheel) Part Numbers**

| Position | Color Filter | Part Number |
|---|---|---|
| 1 | OPEN | N/A |
| 2 | Pebbles | 41.6006.7002 |
| 3 | Dust Break-Up | 41.6006.7025 |
| 4 | Medium Circle | 41.6006.6001 |
| 5 | Night Sky | 41.6006.5011 |
| 6 | Leaves | 41.6006.5501 |
| 7 | Vertical Bars | 41.6006.4202 |
| 8 | Wave | 41.6006.7008 |
| 9 | Block Break-Up | 41.6006.7015 |
| 10 | Tribal Break-Up | 41.6006.5523 |
| 11 | Liquid Break-Up | 41.6006.5009 |
| 12 | Alpha Rays | 41.6006.7029 |

### Standard Rotating Gobos

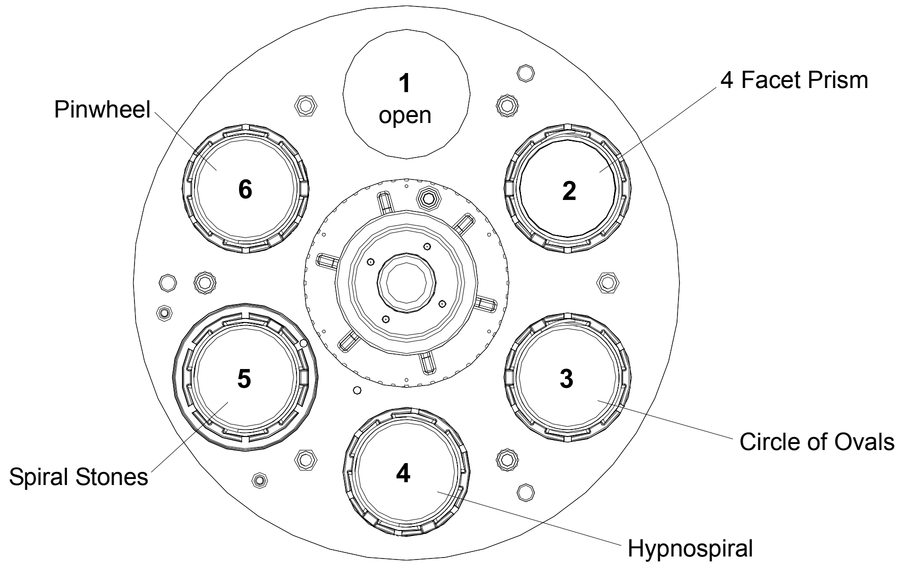



**Figure 3-5: Standard Rotating Gobos**

**Table 3-3: Rotating Gobo Part Numbers**

| Position | Gobo Style | Part Number |
|---|---|---|
| 1 | OPEN | N/A |
| 2 | 4 Facet Prism | 41.6016.8004 |
| 3 | Circle of Ovals | 41.6016.6011 |
| 4 | Hypnospiral | 41.6016.4316 |
| 5 | Spiral Stones | 41.6016.6990 |
| 6 | Pinwheel | 41.6016.4305 |

**WARNING:** Users of VARI❋LITE luminaires should not install or use metal gobos. The use of metal gobos in any VARI❋LITE product may damage the luminaire and could void the luminaire's warranty.

# DMX Operation

## VL2500 Spot Channel Mapping

These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence.

**Figure 3-6: VL2500 Spot Luminaire Channel Mapping**

| DMX Channel | Parameters | Range |
|---|---|---|
| 1 | Intensity | 0 (closed) - 255 (open) |
| 2 | Pan Hi Byte | 0 - 65535 |
| 3 | Pan Lo Byte | |
| 4 | Tilt Hi Byte | 0 - 65535 |
| 5 | Tilt Lo Byte | |
| 6 | Cyan Mixer | 0 (open) - 255 (full saturation) |
| 7 | Yellow Mixer | 0 (open) - 255 (full saturation) |
| 8 | Magenta Mixer | 0 (open) - 255 (full saturation) |
| 9 | Fixed Color Wheel | 0 - 216 (index) / 217 - 255 (spins) |
| 10 | Edge | 0 - 255 |
| 11 | Strobe | 0 (open) - 255 (maximum) |
| 12 | Zoom | 0 (small) - 255 (wide) |
| 13 | Fixed Gobo Wheel | 0 - 216 (index) / 217 - 255 (spins) |
| 14 | Rotating Gobo Wheel | 0 - 108 (index) / 109 - 216 (rotating) / 217 - 255 (spins) |
| 15 | Index Hi Byte | 0 - 65535 |
| 16 | Index Lo Byte | |
| 17 | Iris | 0 (closed) - 255 (open) |
| 18 | F Time* | 0 (fast) - 255 (proportional) |
| 19 | C Time* | 0 (fast) - 255 (proportional) |
| 20 | B Time* | 0 (fast) - 255 (proportional) |
| 21 | G Time* | 0 (fast) - 255 (proportional) |
| 22 | Control* | See "Control Channel Functions" on page 43. |

***Notes*:**

**Use of Timing Channels:** The default value setting in the profile should be 255 (proportional control) to allow smooth movement when using console timing. The Timing channel data should change as a snap. A zero value will give the fastest move but without any smoothing, this can look steppy in console timed moves.

To use a timing channel instead of console timing it is necessary to set the timing channel to the desired value and set cue and/or parameter time to zero. A combination of time controls can produce unexpected results. Refer to "Luminaire Timing" on page 36 for more information.

**Timing Channel Control:** The luminaire uses the timing channel value to calculate a smooth continuous movement for a given time and transition

**Console Timing:** The Console calculates the time duration between the DMX increments to be sent for a given time and transition.

**Timing Channel Mapping:**

Focus timing: Pan and Tilt

Color timing: Cyan, Yellow, Magenta, and the Fixed Color Wheel.

Beam timing: Zoom, Edge, and Iris.

Gobo Timing: Gobo Wheels (Rotating and Fixed).

Note, Index/Rotation and wheel spins channels are not mapped to a Timing Channel.

# DMX Mapping

## CYM Crossfade Color Mixing and Dimmer

### CYM Color Wheels

Table 3-4: DMX Map For CYM Crossfade Color Mixing

| % Value | DMX Value | Action |
|---|---|---|
| 0 | 0 | Open (White) |
| 100 | 255 | Closed (Full Saturation) |

### Dimmer Wheel

Table 3-5: DMX Map For Dimmer

| % Value | DMX Value | Action |
|---|---|---|
| 0 | 0 | Closed |
| 100 | 255 | Open |

## Fixed Color and Gobo Control

### Color/Gobo Wheels

Table 3-6: DMX Map For Color/Gobo Wheels

| % Value | DMX (0-255) | Color Wheel | Gobo Wheel |
|---|---|---|---|
| 0 | 0 | Open Frame 1 | |
| | 1 | | |
| | 2 | | |
| 1 | 3 | | |
| | 4 | | |
| 2 | 5 | | |
| | 6 | | |
| | 7 | | |
| 3 | 8 | | Half Frame |
| | 9 | Half Frame | |
| 4 | 10 | | |
| | 11 | | |
| | 12 | | |
| 5 | 13 | | |
| | 14 | | |

Table 3-6: DMX Map For Color/Gobo Wheels (Continued)

| % Value | DMX (0-255) | Color Wheel | Gobo Wheel |
|---|---|---|---|
| 6 | 15 | | |
| | 16 | | |
| | 17 | | |
| 7 | 18 | Full Frame 2 | Full Frame 2 |
| | 19 | | |
| 8 | 20 | | |
| | 21 | | |
| | 22 | | |
| 9 | 23 | | |
| | 24 | | |
| 10 | 25 | | |
| | 26 | | Half Frame |
| | 27 | Half Frame | |
| 11 | 28 | | |
| | 29 | | |
| | 30 | | |
| 12 | 31 | | |
| | 32 | | |
| 13 | 33 | | |
| | 34 | | |
| | 35 | | |
| 14 | 36 | Full Frame 3 | Full Frame 3 |
| | 37 | | |
| 15 | 38 | | |
| | 39 | | |
| | 40 | | |
| 16 | 41 | | |
| | 42 | | |
| 17 | 43 | | |
| | 44 | Half Frame | Half Frame |
| | 45 | | |
| 18 | 46 | | |
| | 47 | | |
| 19 | 48 | | |
| | 49 | | |
| | 50 | | |
| 20 | 51 | | |
| | 52 | | |
| | 53 | | |
| 21 | 54 | Full Frame 4 | |
| | 55 | | Full Frame 4 |
| 22 | 56 | | |

Table 3-6: DMX Map For Color/Gobo Wheels (Continued)

| % Value | DMX (0-255) | Color Wheel | Gobo Wheel |
|---|---|---|---|
| | 57 | | |
| | 58 | | |
| 23 | 59 | | |
| | 60 | | |
| 24 | 61 | | |
| | 62 | | |
| | 63 | Half Frame | Half Frame |
| 25 | 64 | | |
| | 65 | | |
| 26 | 66 | | |
| | 67 | | |
| | 68 | | |
| 27 | 69 | | |
| | 70 | | |
| 28 | 71 | | |
| | 72 | Full Frame 5 | Full Frame 5 |
| | 73 | | |
| 29 | 74 | | |
| | 75 | | |
| 30 | 76 | | |
| | 77 | | |
| | 78 | | |
| 31 | 79 | | |
| | 80 | | |
| | 81 | Half Frame | Half Frame |
| 32 | 82 | | |
| | 83 | | |
| 33 | 84 | | |
| | 85 | | |
| | 86 | | |
| 34 | 87 | | |
| | 88 | | |
| 35 | 89 | | |
| | 90 | Full Frame 6 | Full Frame 6 |
| | 91 | | |
| 36 | 92 | | |
| | 93 | | |
| 37 | 94 | | |
| | 96 | | |
| 38 | 97 | | |
| | 98 | | Half Frame |
| 39 | 99 | Half Frame | |

Table 3-6: DMX Map For Color/Gobo Wheels (Continued)

| % Value | DMX (0-255) | Color Wheel | Gobo Wheel |
|---|---|---|---|
| | 100 | | |
| | 101 | | |
| 40 | 102 | | |
| | 103 | | |
| | 104 | | |
| 41 | 105 | | |
| | 106 | | |
| 42 | 107 | | |
| | 108 | Full Frame 7 | Full Frame 7 |
| | 109 | | |
| 43 | 110 | | |
| | 111 | | |
| 44 | 112 | | |
| | 113 | | |
| | 114 | | |
| 45 | 115 | | |
| | 116 | | |
| 46 | 117 | Half Frame | Half Frame |
| | 118 | | |
| | 119 | | |
| 47 | 120 | | |
| | 121 | | |
| 48 | 122 | | |
| | 123 | | |
| | 124 | | |
| 49 | 125 | | |
| | 126 | Full Frame 8 | Full Frame 8 |
| | 127 | | |
| 50 | 128 | | |
| | 129 | | |
| 51 | 130 | | |
| | 131 | | |
| | 132 | | |
| 52 | 133 | | |
| | 134 | | |
| 53 | 135 | Half Frame | Half Frame |
| | 136 | | |
| | 137 | | |
| 54 | 138 | | |
| | 139 | | |
| 55 | 140 | | |
| | 141 | | |

**Table 3-6: DMX Map For Color/Gobo Wheels (Continued)**

| % Value | DMX (0-255) | Color Wheel | Gobo Wheel |
|---|---|---|---|
| | 142 | | |
| 56 | 143 | | |
| | 144 | Full Frame 9 | Full Frame 9 |
| 57 | 145 | | |
| | 146 | | |
| | 147 | | |
| 58 | 148 | | |
| | 149 | | |
| 59 | 150 | | |
| | 151 | | |
| | 152 | | Half Frame |
| 60 | 153 | Half Frame | |
| | 154 | | |
| | 155 | | |
| 61 | 156 | | |
| | 157 | | |
| 62 | 158 | | |
| | 159 | | |
| | 160 | | |
| 63 | 161 | | |
| | 162 | Full Frame 10 | Full Frame 10 |
| 64 | 163 | | |
| | 164 | | |
| | 165 | | |
| 65 | 166 | | |
| | 167 | | |
| 66 | 168 | | |
| | 169 | | |
| | 170 | | |
| 67 | 171 | | Half Frame |
| | 172 | Half Frame | |
| 68 | 173 | | |
| | 174 | | |
| | 175 | | |
| 69 | 176 | | |
| | 177 | | |
| | 178 | | |
| 70 | 179 | | |
| | 180 | Full Frame 11 | Full Frame 11 |
| 71 | 181 | | |
| | 182 | | |
| | 183 | | |

Table 3-6: DMX Map For Color/Gobo Wheels (Continued)

| % Value | DMX (0-255) | Color Wheel | Gobo Wheel |
|---|---|---|---|
| 72 | 184 | | |
| | 185 | | |
| 73 | 186 | | |
| | 187 | | |
| | 188 | | |
| 74 | 189 | | Half Frame |
| | 190 | Half Frame | |
| 75 | 191 | | |
| | 192 | | |
| | 193 | | |
| 76 | 194 | | |
| | 195 | | |
| 77 | 196 | | |
| | 197 | | |
| | 198 | Full Frame 12 | Full Frame 12 |
| 78 | 199 | | |
| | 200 | | |
| 79 | 201 | | |
| | 202 | | |
| | 203 | | |
| 80 | 204 | | |
| | 205 | | |
| | 206 | Half Frame | Half Frame |
| 81 | 207 | | |
| | 208 | | |
| 82 | 209 | | |
| | 210 | | |
| | 211 | | |
| 83 | 212 | | |
| | 213 | | |
| 84 | 214 | | |
| | 215 | | |
| | 216 | Open | Open |
| 85 | 217 | Spin F CW | Spin F CCW |
| | 218 | | |
| 86 | 219 | | |
| | 220 | | |
| | 221 | | |
| 87 | 222 | | |
| | 223 | | |
| 88 | 224 | | |
| | 225 | Spin M CW | Spin M CCW |

Table 3-6: DMX Map For Color/Gobo Wheels (Continued)

| % Value | DMX (0-255) | Color Wheel | Gobo Wheel |
|---|---|---|---|
| | 226 | | |
| 89 | 227 | | |
| | 228 | | |
| | 229 | | |
| 90 | 230 | | |
| | 231 | | |
| 91 | 232 | | |
| | 233 | | |
| | 234 | | |
| 92 | 235 | Spin S CW | Spin S CCW |
| | 236 | Stop | Stop |
| 93 | 237 | Spin S CCW | Spin S CW |
| | 238 | | |
| | 239 | | |
| 94 | 240 | | |
| | 241 | | |
| 95 | 242 | | |
| | 243 | | |
| | 244 | | |
| 96 | 245 | | |
| | 246 | Spin M CCW | |
| 97 | 247 | | |
| | 248 | | |
| | 249 | | |
| 98 | 250 | | |
| | 251 | | |
| 99 | 252 | | |
| | 253 | | |
| | 254 | | |
| 100 | 255 | Spin F CCW | |

### Rotating Gobo Index/Rotation

The rotating gobo wheel operates in two modes: INDEX Mode and ROTATE Mode. The corresponding values are given in the DMX Map Tables below. Gobos will also behave as follows:

- It is not necessary for the wheel to complete a full revolution to change a gobo from indexing mode to rotating mode.
- Timed moves are only available using the Gobo Time channel (21).
- Spins are variable from DMX 217-233 for CCW fast to slow, and 239-255 for CW slow to fast
- When selected as index mode, value 0 to 255 will position the gobo. Use channel 16 as a fine adjustment of the gobo's position.

**Table 3-7: DMX Map for Gobo Rotate Mode**

| % Value | DMX (0-255) | Gobo Position |
|---|---|---|
| 0-49 | 0 (Fast) - 126 (Slow) | Spin CW |
| 50 | 127-129 | Stop |
| 51-100 | 130 (Slow)-255 (Fast) | Spin CCW |

### Rotating Gobo Wheel

**Table 3-8: DMX Map for Rotating Gobo Wheel**

| % Value | DMX (0-255) | Action |
|---|---|---|
| 0 | 0 | Position 1 (Open) |
| 8 | 19 | Position 2 |
| 15 | 37 | Position 3 |
| 22 | 55 | Position 4 |
| 29 | 73 | Position 5 |
| 36 | 91 | Position 6 |
| 43 | 110 | Position 1 (Open) |
| 50 | 128 | Position 2 (Rot) |
| 57 | 145 | Position 3 (Rot) |
| 64 | 163 | Position 4 (Rot) |
| 71 | 181 | Position 5 (Rot) |
| 79 | 200 | Position 6 (Rot) |
| 84 | 216 | Open |
| 85 | 217 | CCW Rot Fast |
| 87 | 222 | CCW Rot Med |
| 91 | 233 | CCW Rot Slow |
| 92 | 234-238 | Stop |
| 94 | 239 | CW Rot Slow |
| 98 | 250 | CW Rot Med |
| 100 | 255 | CW Rot Fast |

# Beam Control

## Beam Iris

**Table 3-9: DMX Map For Beam Iris**

| % Value | DMX Value | Action |
|---|---|---|
| 0 | 0 | Closed |
| 100 | 255 | Open |

## Edge

**Table 3-10: DMX Map For Edge**

| % Value | DMX Value | Action |
|---|---|---|
| 0 | 0 | Blooms In (far focus) |
| 100 | 255 | Blooms Out (near focus) |

## Strobe

**Table 3-11: DMX Map For Strobe**

| % Value | DMX Value | Action |
|---|---|---|
| 0 | 0-2 | Open |
| 1 | 3-5 | Closed |
| 2 | 6-7 | Slow Random |
| 3 | 8-10 | Med Random |
| 4 | 11-12 | Fast Random |
| 5-100 | 13-255 | Speed Range |

## Zoom

**Table 3-12: DMX Map For Zoom**

| % Value | DMX Value | Action |
|---|---|---|
| 0 | 0 | Narrow |
| 100 | 255 | Wide |

# Luminaire Timing

## Luminaire Timing Channel Information

Timing channel control improves the timed moves of certain groups of parameters. Four timing channels are provided, one for Focus (Pan and Tilt), one for color parameters, one for beam parameters and one for gobo paramters (Fixed and Rotating). Timing channels support time values of up to six minutes.

**Table 3-13: Channel Function / Timing Channel Relationship**

| Channel Function | Timing Channel | | | |
|---|---|---|---|---|
| | Focus Time | Color Time | Beam Time | Gobo Time |
| Pan (Hi Byte/Lo Byte) | ♦ | | | |
| Tilt (Hi Byte/Lo Byte) | ♦ | | | |
| Color | | ♦ | | |
| Index | | | ♦ | |
| Iris | | | ♦ | |
| Edge | | | ♦ | |
| Zoom | | | ♦ | |
| Fixed Gobo | | | | ♦ |
| Rotating Gobo | | | | ♦ |

A timing value of zero is full speed. A time value of 100% (or 255 in DMX) causes the associated parameter(s) to follow cue fade time (console time) rather than the timing channel.

**Note:** The particular storing syntax for your console, as well as instructions on how to write part cues, can be found in the operation manual for that console.

**To use these channels, you must:**

Step 1. Create the cue, including color, gobo, and edge as required.

Step 2. Decide which fixtures and which parameter groups will use timing channels.

Step 3. Assign a value to the particular timing channel(s) you wish to use (for timing information see chart on next page).

Step 4. Set console timing (or cue fade time) for parameters and timing channels to zero seconds.

Step 5. Store cue.

**Note:** Avoid changing timing channel values in a fading cue. This can cause unexpected behavior in the luminaire as the timing channel value is updated over time. Timing channel values and the final destination of the parameters affected by the timing channel should always be sent in a zero count.

Timing channels can be set in either % or 0-255 (DMX) modes, with the following values assigned:

**Table 3-14: Timing Channels Map**

| % Value | DMX | = Seconds |
|---|---|---|
| | 0 | Full Speed |
| | 1 | 0.2 |
| | 2 | 0.4 |
| 1 | 3 | 0.6 |
| | 4 | 0.8 |
| 2 | 5 | 1 |
| | 6 | 1.2 |
| | 7 | 1.4 |
| 3 | 8 | 1.6 |
| | 9 | 1.8 |
| 4 | 10 | 2 |
| | 11 | 2.2 |
| | 12 | 2.4 |
| 5 | 13 | 2.6 |
| | 14 | 2.8 |
| 6 | 15 | 3 |
| | 16 | 3.2 |
| | 17 | 3.4 |
| 7 | 18 | 3.6 |
| | 19 | 3.8 |
| 8 | 20 | 4 |
| | 21 | 4.2 |
| | 22 | 4.4 |
| 9 | 23 | 4.6 |
| | 24 | 4.8 |
| 10 | 25 | 5 |
| | 26 | 5.2 |
| | 27 | 5.4 |
| 11 | 28 | 5.6 |
| | 29 | 5.8 |
| | 30 | 6 |
| 12 | 31 | 6.2 |
| | 32 | 6.4 |
| 13 | 33 | 6.6 |
| | 34 | 6.8 |
| | 35 | 7.0 |
| 14 | 36 | 7.2 |
| | 37 | 7.4 |
| 15 | 38 | 7.6 |
| | 39 | 7.8 |

**Table 3-14: Timing Channels Map (Continued)**

| % Value | DMX | = Seconds |
|---|---|---|
| | 40 | 8 |
| 16 | 41 | 8.2 |
| | 42 | 8.4 |
| 17 | 43 | 8.6 |
| | 44 | 8.8 |
| | 45 | 9 |
| 18 | 46 | 9.2 |
| | 47 | 9.4 |
| 19 | 48 | 9.6 |
| | 49 | 9.8 |
| | 50 | 10 |
| 20 | 51 | 10.2 |
| | 52 | 10.4 |
| | 53 | 10.6 |
| 21 | 54 | 11 |
| | 55 | 11 |
| 22 | 56 | 12 |
| | 57 | 12 |
| | 58 | 13 |
| 23 | 59 | 13 |
| | 60 | 14 |
| 24 | 61 | 14 |
| | 62 | 14 |
| | 63 | 15 |
| 25 | 64 | 15 |
| | 65 | 16 |
| 26 | 66 | 16 |
| | 67 | 16 |
| | 68 | 17 |
| 27 | 69 | 17 |
| | 70 | 18 |
| 28 | 71 | 18 |
| | 72 | 18 |
| | 73 | 19 |
| 29 | 74 | 19 |
| | 75 | 20 |
| 30 | 76 | 20 |
| | 77 | 20 |
| | 78 | 21 |
| 31 | 79 | 21 |
| | 80 | 21 |
| | 81 | 22 |

**Table 3-14: Timing Channels Map (Continued)**

| % Value | DMX | = Seconds |
|---|---|---|
| 32 | 82 | 22 |
| | 83 | 23 |
| 33 | 84 | 23 |
| | 85 | 23 |
| | 86 | 24 |
| 34 | 87 | 24 |
| | 88 | 25 |
| 35 | 89 | 25 |
| | 90 | 25 |
| | 91 | 26 |
| 36 | 92 | 26 |
| | 93 | 27 |
| 37 | 94 | 27 |
| | 95 | 27 |
| | 96 | 28 |
| 38 | 97 | 28 |
| | 98 | 29 |
| 39 | 99 | 29 |
| | 100 | 29 |
| | 101 | 30 |
| 40 | 102 | 30 |
| | 103 | 30 |
| | 104 | 31 |
| 41 | 105 | 31 |
| | 106 | 32 |
| 42 | 107 | 32 |
| | 108 | 32 |
| | 109 | 33 |
| 43 | 110 | 33 |
| | 111 | 34 |
| 44 | 112 | 34 |
| | 113 | 34 |
| | 114 | 35 |
| 45 | 115 | 35 |
| | 116 | 36 |
| 46 | 117 | 36 |
| | 118 | 36 |
| | 119 | 37 |
| 47 | 120 | 37 |
| | 121 | 38 |
| 48 | 122 | 38 |
| | 123 | 38 |

Table 3-14: Timing Channels Map (Continued)

| % Value | DMX | = Seconds |
|---|---|---|
| | 124 | 39 |
| 49 | 125 | 39 |
| | 126 | 39 |
| | 127 | 40 |
| 50 | 128 | 40 |
| | 129 | 41 |
| 51 | 130 | 41 |
| | 131 | 41 |
| | 132 | 42 |
| 52 | 133 | 42 |
| | 134 | 43 |
| 53 | 135 | 43 |
| | 136 | 43 |
| | 137 | 44 |
| 54 | 138 | 44 |
| | 139 | 45 |
| 55 | 140 | 45 |
| | 141 | 45 |
| | 142 | 46 |
| 56 | 143 | 46 |
| | 144 | 47 |
| 57 | 145 | 47 |
| | 146 | 47 |
| | 147 | 48 |
| 58 | 148 | 48 |
| | 149 | 49 |
| 59 | 150 | 49 |
| | 151 | 49 |
| | 152 | 50 |
| 60 | 153 | 50 |
| | 154 | 50 |
| | 155 | 51 |
| 61 | 156 | 51 |
| | 157 | 52 |
| 62 | 158 | 52 |
| | 159 | 52 |
| | 160 | 53 |
| 63 | 161 | 53 |
| | 162 | 54 |
| 64 | 163 | 54 |
| | 164 | 54 |
| | 165 | 55 |

**Table 3-14: Timing Channels Map (Continued)**

| % Value | DMX | = Seconds |
|---|---|---|
| 65 | 166 | 55 |
| | 167 | 56 |
| 66 | 168 | 56 |
| | 169 | 56 |
| | 170 | 57 |
| 67 | 171 | 57 |
| | 172 | 58 |
| 68 | 173 | 58 |
| | 174 | 58 |
| | 175 | 59 |
| 69 | 176 | 59 |
| | 177 | 59 |
| | 178 | 60 |
| 70 | 179 | 60 |
| | 180 | 65 |
| 71 | 181 | 65 |
| | 182 | 65 |
| | 183 | 70 |
| 72 | 184 | 70 |
| | 185 | 75 |
| 73 | 186 | 75 |
| | 187 | 75 |
| | 188 | 80 |
| 74 | 189 | 80 |
| | 190 | 85 |
| 75 | 191 | 85 |
| | 192 | 85 |
| | 193 | 90 |
| 76 | 194 | 90 |
| | 195 | 95 |
| 77 | 196 | 95 |
| | 197 | 95 |
| | 198 | 100 |
| 78 | 199 | 100 |
| | 200 | 110 |
| 79 | 201 | 110 |
| | 202 | 110 |
| | 203 | 120 |
| 80 | 204 | 120 |
| | 205 | 120 |
| 81 | 206 | 130 |
| | 207 | 130 |

**Table 3-14: Timing Channels Map (Continued)**

| % Value | DMX | = Seconds |
|---|---|---|
| | 208 | 140 |
| 82 | 209 | 140 |
| | 210 | 140 |
| | 211 | 150 |
| 83 | 212 | 150 |
| | 213 | 160 |
| 84 | 214 | 160 |
| | 215 | 160 |
| | 216 | 170 |
| 85 | 217 | 170 |
| | 218 | 180 |
| 86 | 219 | 180 |
| | 220 | 180 |
| | 221 | 190 |
| 87 | 222 | 190 |
| | 223 | 200 |
| 88 | 224 | 200 |
| | 225 | 200 |
| | 226 | 210 |
| 89 | 227 | 210 |
| | 228 | 210 |
| | 229 | 220 |
| 90 | 230 | 220 |
| | 231 | 230 |
| 91 | 232 | 230 |
| | 233 | 230 |
| | 234 | 240 |
| 92 | 235 | 240 |
| | 236 | 250 |
| 93 | 237 | 250 |
| | 238 | 250 |
| | 239 | 260 |
| 94 | 240 | 260 |
| | 241 | 270 |
| 95 | 242 | 270 |
| | 243 | 270 |
| | 244 | 280 |
| 96 | 245 | 280 |
| | 246 | 290 |
| 97 | 247 | 290 |
| | 248 | 290 |
| | 249 | 300 |

Table 3-14: Timing Channels Map (Continued)

| % Value | DMX | = Seconds |
|---|---|---|
| 98 | 250 | 300 |
| | 251 | 310 |
| 99 | 252 | 310 |
| | 253 | 310 |
| | 254 | 310 |
| 100 | 255 | Follows Cue Data |

# Control Channel Functions

The following control actions must be accomplished with zero time transition or with timing disabled. Discrete values must be used and not manual controls such as faders or encoders.

Table 3-15: Control Channel Functions

| Control Channel Function | Control Channel Value | | |
|---|---|---|---|
| | % Value | DMX Value | After 3 Secs |
| Display On | 1 | 1-4 | 0 |
| Luminaire Reset | 33 | 81 - 87 | 0 |
| Lamp Off | 66 | 165 - 171 | 0 |
| Lamp On | 99 | 249 - 255 | 0 |

**To use control channel functions:**

Step 1. Select an action to be sent.

Step 2. Set control channel value for desired action (for example, 84 for reset). Hold value for 3 seconds.

**Note:** A numerical keypad is required for sending values. An encoder or fader does not allow for a “snap” value change, which is required to affect the control functions.

Step 3. Set control channel value to zero. (This must occur without any scaling values. Action will be voided if other values are detected between action value and zero.)

# Updating Software

## Reprogramming Luminaires

In some cases, it may be desirable to upgrade the luminaire's operating software. This process requires a PC, *VLDownload.exe*, .bin files and the Luminaire Programming Kit (28.9661.0054).

### Components Overview

#### Computer Requirements

- PC running Windows 95/98, Windows NT (4.0 or higher), or Windows 2000. (Program is not compatible with Macintosh computers.)
- Serial communication port. (RS-232 only, USB not supported.)

#### VL Download Program

The *VL Download.exe* program allows you to transfer new versions of the operating software (.bin files) to the luminaires via the PC. The *VL Download.exe* and current .bin files are available from the Product Downloads page at www.vari-lite.com. Instructions for installing the program on your PC are also available on the Product Downloads page.

#### Luminaire Programming Kit

The luminaire programming kit allows you to connect your PC to the luminaire chain in order to update software.

Luminaire Programming Kit (28.9661.0054) components:

- 6-Ft. Serial Straight Thru DB9M-F Cable (46.6033.0006)
- RS-232 to RS-485 Interface Converter (46.6036.0001)
- 6-Ft. RJ45 to 5-Pin Female XLR Cable (25.9661.0055)

## Reprogramming Procedure

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**Note:** Up to 32 luminaires can be programmed at the same time if they are data linked together. Refer to "Connecting Data and Power" on page 17. (Programming more than 32 luminaires will require programming in batches of 32 or less.)

---

**To update luminaire software:**

Step 1. From Product Downloads page at www.vari-lite.com, download and install the *VLDownload.exe* program and required .bin files onto your PC (following instructions at the website).

Step 2. Assemble Luminaire Programming Kit components by connecting *Serial Straight Thru Cable* and *RJ45-to-XLR cable* to Interface Converter.

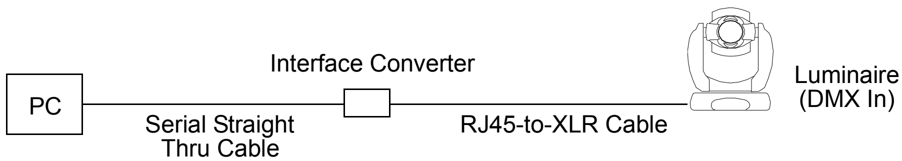



**Figure 3-7: Hardware Setup**

Step 3. Connect *Serial Straight Thru cable* to serial Comm Port of PC and connect *RJ45-to-XLR cable* to DMX In connector of luminaire.

Step 4. Apply power to PC and luminaire(s).

Step 5. Run *VLDownload.exe* program by selecting from Start menu Programs list or by selecting C:\ProgramFiles\Vari-Lite\VLDownload Program from directory. (Luminaire Software Download window will open.)

Step 6. At Select Comm Port section of window (refer to Figure 3-8 on next page), select serial Comm Port (Comm Port 1, Comm Port 2, Comm Port 3, or Comm Port 4) where *Serial Straight Thru Cable* is connected.

---

**Note:** DMX Data must be disconnected before downloading software to luminaires. (Do not merge with DMX signal.)

---

Step 7. At Select Software to Download section of window, select required luminaire software version to download by clicking its button or select Download All. (Software version is identified by the date and time: MM/DD/YY and HH:MM.) The buttons function as follows:

VL2500 button downloads the software to all VL2500 luminaires.

Download All button is the equivalent of executing all of the specific software version buttons shown in the window (if applicable). They will be executed one at a time in the order they appear in the window. This button can be used when any combination of VARI✱LITE luminaires are connected to the PC.

**Note:** Version dates shown in this graphic are for illustration purposes only and may not correspond to the version you are downloading.

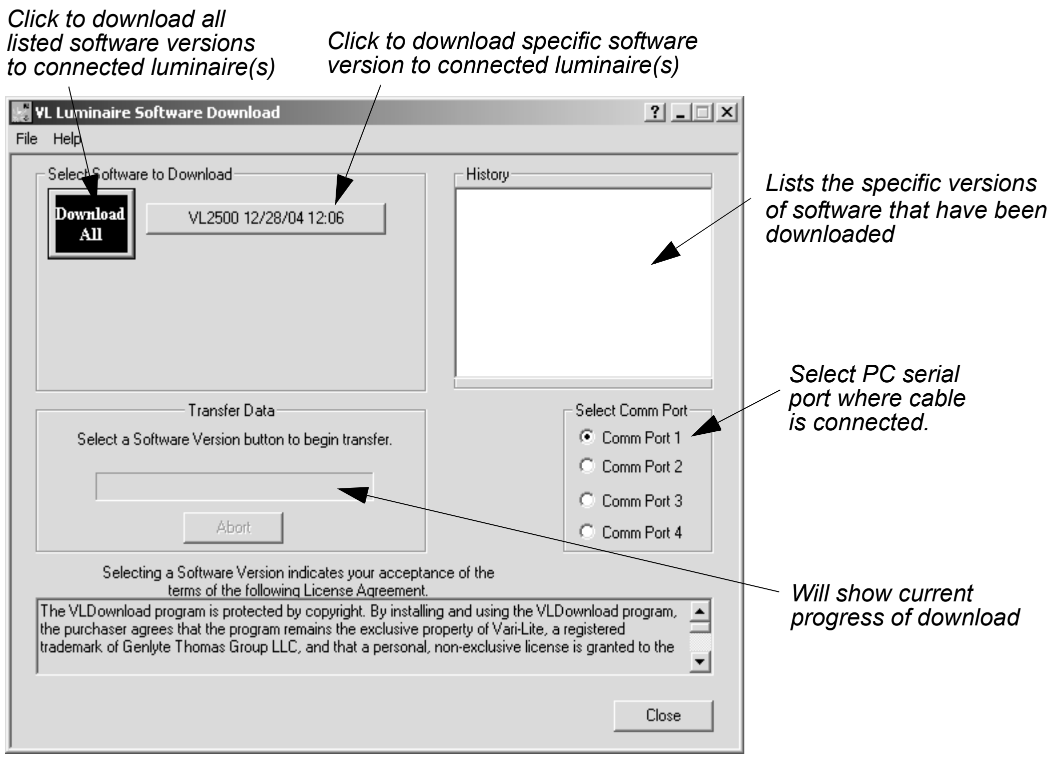



**Figure 3-8: Download Interface Window**

Step 8. Download will proceed.

Step 9. Click Close to exit.

**Note:** The History section of the window shows what specific types of luminaire software have been downloaded since the beginning of the session (window will reset once the program is closed and re-opened).

**Verify software version at luminaire:**

Step 1. At Menu Display, press [Menu].

Step 2. Press [Up] / [Down] arrows until Fixture appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows until Version appears. Press [Enter].

The first half of the version date will be displayed as MM/DD/YY (month/day/year): For example, 07/21/02 = July 21, 2002

Press [Enter] to display second half of version date.

The second half of the version date will be displayed as XX.XX (For example, 16.36 = 4:36 pm).

# Transferring Software From Luminaire to Luminaire

It is possible to transfer specific software versions between luminaires. As in the case of installing new software versions, multiple luminaires can be programmed at the same time if they are data linked together (refer to "Connecting Data and Power" on page 17), however a maximum of 32 luminaires can be updated at once.

## Hardware Requirements

Data cables used in this process must have two twisted pairs and a shield. It is also recommended that cables meet all other USITT DMX specification requirements. Refer to "Data Cables" on page 10.

A DMX termination connector is used in this process. Refer to page 12 for more information regarding the construction of this connector.

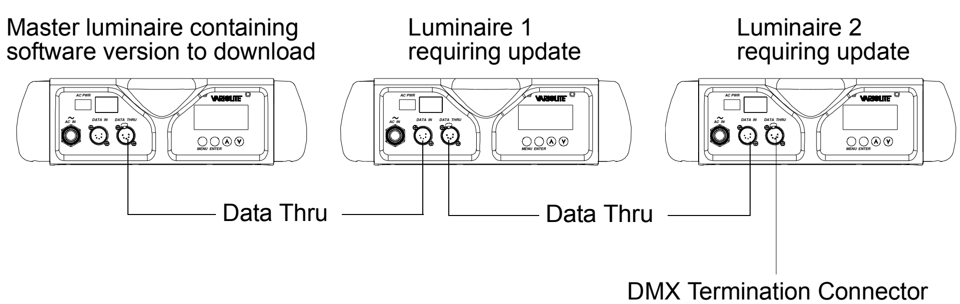



**Figure 3-9: Software Transfer Setup**

## Transfer Procedure

This procedure is used to transfer software versions between luminaires.

Step 1. At last luminaire, install DMX termination connector into DATA THRU XLR connector.

Step 2. At master luminaire (first in chain) Menu Display, press [Menu].

Step 3. Press [Up] / [Down] arrows until Fixture appears.

Step 4. Press [Up] / [Down] arrows until Download appears. Press [Enter].

Step 5. OK? will be displayed. Press [Enter] to accept.

Step 6. Download will proceed. (Download will take 4-5 seconds.) The number of blocks displayed will be less in a luminaire-to-luminaire download than in a PC-to-luminaire download for the same software version.

Step 7. Once download is complete, luminaire will automatically recalibrate. Once recalibration is complete, reset (recalibrate again) luminaire.

**Verify software version at luminaire:**

Step 1. At Menu Display, press [Menu].

Step 2. Press [Up] / [Down] arrows until Fixture appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows until Version appears. Press [Enter].

The first half of the version will be displayed as a date (MM/DD./YY). For example, 03/18/03 (March 18, 2003).

Press [Enter] to display second half of version. This will be displayed as a time (HH:MM). For example, 16.36 = 4:36 pm)

*CHAPTER 4.*

# Menu System

This chapter contains instructions for operating the luminaire using the Menu Display feature.

- **Menu Operation**
- **Self Tests**

# Menu Operation

## What Is the Menu System?

The menu system is a programmable set of commands used to configure, address, operate, and test the luminaire. The menu system is controlled at the Menu Display available at the enclosure input panel.

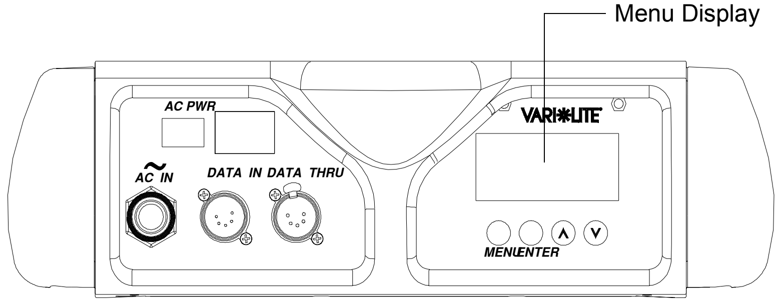



**Figure 4-1: Menu Display Location**

The menu system has seven main functions which are referred to as "1st level." Within these main functions, there can be up to four additional sub-functions (levels 2 thru 5), making five total levels.

## Controls Operation

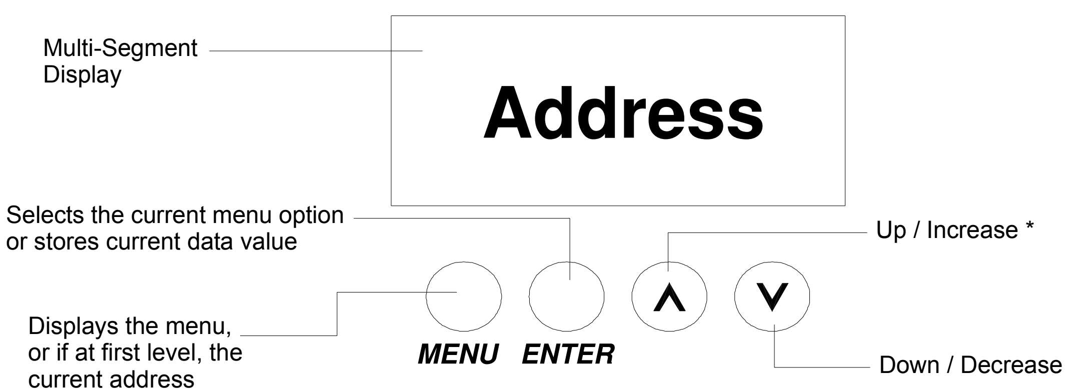
The menu system is controlled by four buttons. These buttons function as follows:

**[Menu] button.** Displays the menu, or if at first level, the current address (Note, also goes back a level if beyond 1st. level).

**[Enter] button.** Selects the current menu option or stores current data value.

**[Up] arrow.** Scrolls menu options upward or increases current data value.*

**[Down] arrow.** Scrolls menu options downward or decreases current data value.*




* The arrows will have opposite functions if the luminaire is hung upside down in a hanging orientation due to the automatic orientation feature. In other words, the arrow pointing downward always functions as down/decrease and the arrow pointing upward always functions as up/increase regardless of the luminaire orientation.

To enter the menu system, first press [Menu]. The functions displayed will be 1st level functions. Scroll through the 1st level functions by pressing [Up] / [Down] arrows. Once the desired function appears in the display, press [Enter]. You are now at the 2nd level. Once again, press the [Up] / [Down] arrows to scroll through 2nd level functions. Press [Enter] to access 3rd level functions and so forth. When the highest level for the function is reached, [Up] / [Down] arrows can be pressed to enter a value or select a toggle activation such as On/Off. Press [Enter] to store the value or select an action.

For example:

| 1st Level | | 2nd Level | | 3rd Level |
|---|---|---|---|---|
| Test | → | All Seq | → | RUN TEST |

## Default State

The menu display's default state during normal operation is to display the DMX address. After 10 seconds of inactivity at the display, it will change to the default state.

After longer periods of inactivity, the menu display will switch to its off state. The default state for this feature is 5 minutes, however, different time lengths can also be programmed.

**To program a different time length for menu off feature:**

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Config (Configuration) appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows to access Display. Press [Enter].

Step 4. Press [Up] / [Down] arrows to select either 30 Sec (30 seconds), 5 Min (5 minutes), 10 Min (10 minutes), or ON (on indefinitely). Press [Enter] to set.

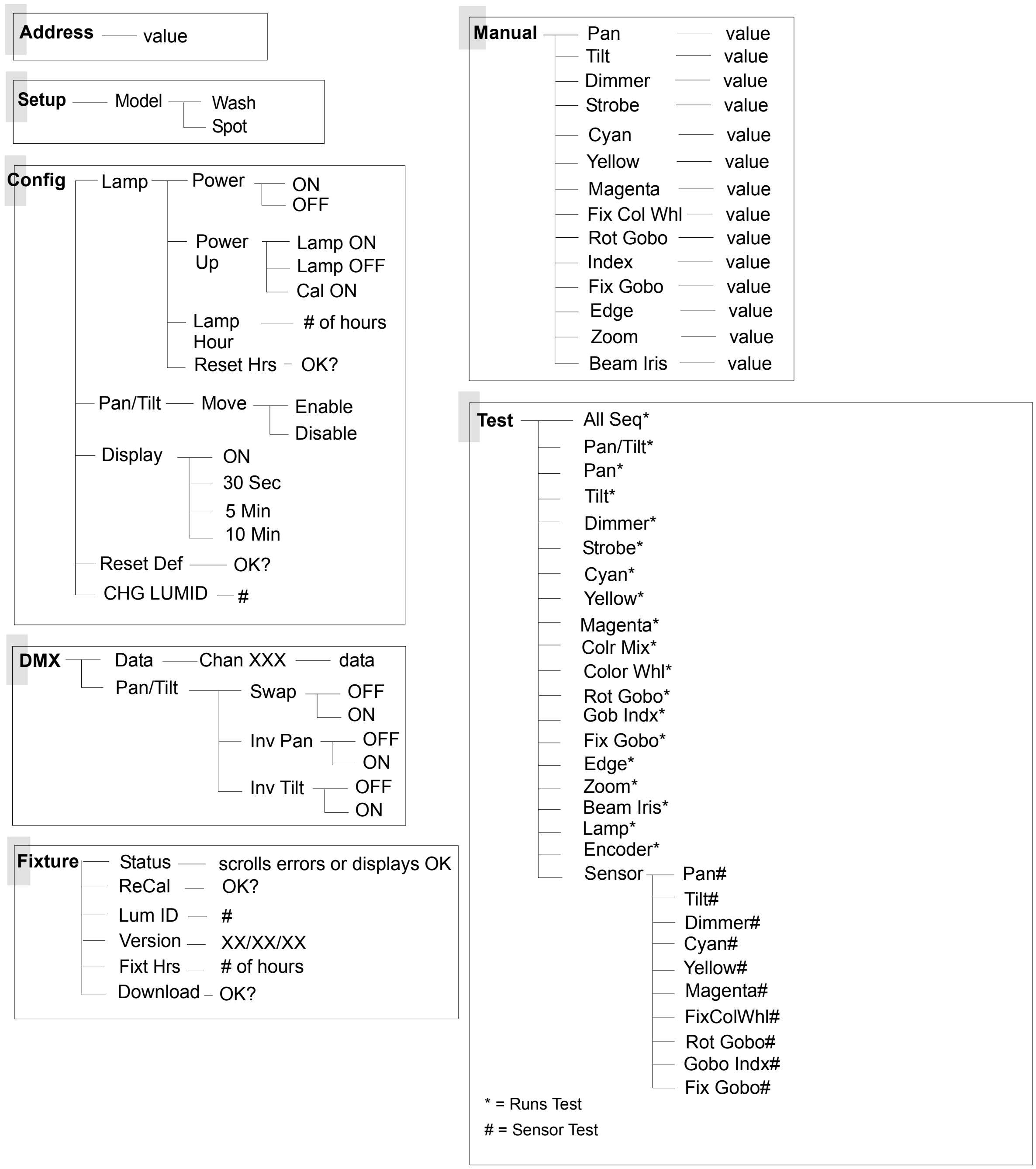
## Shortcuts

A few button combinations are provided as shortcuts for frequently used menu functions. These shortcuts are as follows:

- Pressing [Enter] and [Up] at the same time = Lamp On
- Pressing [Enter] and [Down] at the same time = Lamp Off
- Pressing [Menu] and [Up] at the same time = Recalibrate
- Pressing [Menu] at Power up interrupts calibration. See “Program Starting Address Without Calibrating Luminaire” on page 20 for more information.

# Menu System Overview

The following is a graphic representation of the entire menu system.



# Menu System Functions

**Table 4-1: Menu System Chart**

| 1st Level | 2nd Level | 3rd Level | 4th Level | 5thLevel |
|---|---|---|---|---|
| **Address** *DMX Address* | **XXX** *Address value* | | | |
| **SetUp** *Select Luminaire Type* | **Model** | **Spot** | | |
| | | **Wash** | | |
| **Config** *System Configuration* | **Lamp** *Lamp Options* | **Power** *Lamp Power* | **ON** (default) | |
| | | | **OFF** | |
| | | **Power Up** *Lamp Power-up State* | **Lamp ON** *Lamp On* (default) | |
| | | | **Lamp OFF** *Lamp Off* | |
| | | | **Cal ON** *On after Calibration* | |
| | | **Lamp Hour** *Lamp Hours Used* | **XXXX** *Cumulative # of Operation Hours* (Not editable) | |
| | | **Reset Hrs** *Reset Lamp Hour Counter* | **OK?** | |
| | **Pan/Tilt** *Pan and Tilt Options* | **Movement** *Position Recovery* | **Enab** *Enable* | |
| | | | **Dis** *Disable* | |
| | **Display** *Display Illumination* | **30sec** *OFF in 30 seconds* | | |
| | | **5Min** *OFF in 5 minutes* (default) | | |
| | | **10Min** *OFF in 10 minutes* | | |
| | | **ON** *ON indefinitely* | | |
| | **Reset Def** *Reset Default Values* | **OK?** | | |
| | **ChgLumID** *Change Lum ID* | **###** *Set Number* | | |
| **DMX** *DMX Data and Pan/Tilt Mode* | **DATA** | **Chan XX** *DMX Channel* | **XXXX** *Data* | |
| | **Pan/Tilt** *Pan/Tilt Options* | **Swap** *Swap Pan & Tilt* | **ON** | |
| | | | **OFF** (default) | |
| | | **InvPan** *Invert Pan* | **ON** | |
| | | | **OFF** (default) | |
| | | **InvTilt** *Invert Tilt* | **ON** | |
| | | | **OFF** (default) | |

## Table 4-1: Menu System Chart (Continued)

| 1st Level | 2nd Level | 3rd Level | 4th Level | 5thLevel |
|---|---|---|---|---|
| **Fixture** | **Status** *Status/Error Display* | Scrolls error messages * or displays **OK** | | |
| | **Re-Cal** *Recalibrate* | **OK?** | | |
| | **LumId** *Luminaire ID* | **XXXX.** *Luminaire ID Number* | | |
| | **Version** *Software Version* | **XX/XX/XX** *Version Date* | | |
| | **Fixt Hrs** *Fixture Hours On (powered)* | **XXXX** *Hours* | | |
| | **Download** *Download Program to Luminaires* | **OK?** | | |
| **Manual** *Manual Commands* | **Pan** *Pan Motor* | **XXXX** *Data* | | |
| | **Tilt** *Tilt Motor* | **XXXX** *Data* | | |
| | **Dimmer** *Dimmer Wheel* | **XXX** *Data* | | |
| | **Strobe** *Strobe* | **XXX** *Data* | | |
| | **Cyan** *Cyan Color Wheel* | **XXX** *Data* | | |
| | **Yellow** *Yellow Color Wheel* | **XXX** *Data* | | |
| | **Magenta** *Magenta Color Wheel* | **XXX** *Data* | | |
| | **FixColWhl** *Fixed Color Wheel* | **XXX** *Data* | | |
| | **RotGobo** *Rotating Gobo Select* | **XXX** *Data* | | |
| | **Index** *Rotating Gobo Index* | **XXX** *Data* | | |
| | **FixGobo** *Select Fixed Gobo* | **XXX** *Data* | | |
| | **Edge** *Edge* | **XXX** *Data* | | |
| | **Zoom** *Zoom* | **XXX** *Data* | | |
| | **Beam Iris** *Beam Iris* | **XXX** *Data* | | |
| **Test** *System Test* | **ALL SEQ** *Sequence Through All Tests* | **RunTest** | Press [Menu] to stop tests | |
| | **Pan/Tilt** *Pan/Tilt* | **RunTest** | | |
| | **Pan** *Pan* | **RunTest** | | |
| | **Tilt** *Tilt* | **RunTest** | | |
| | **Dimmer** *Dimmer* | **RunTest** | | |
| | **Strobe** *Strobe* | **RunTest** | | |
| | **Cyan** *Cyan Color Wheel* | **RunTest** | | |
| | **Yellow** *Yellow Color Wheel* | **RunTest** | | |
| | **Magenta** *Magenta Color Wheel* | **RunTest** | | |
| | **ColrMix** *Color Wheel Color Mixing* | **RunTest** | | |
| | **ColorWhl** *Fixed Color Wheel* | **RunTest** | | |

**Table 4-1: Menu System Chart (Continued)**

| 1st Level | 2nd Level | 3rd Level | 4th Level | 5thLevel |
|---|---|---|---|---|
| Test (cont.) | **RotGobo** *Rotating Gobo Wheel* | **RunTest** | Press [Menu] to stop tests | |
| | **GobIndx** *Rotating Gobos Indexes* | **RunTest** | | |
| | **FixGobo** *Fixed Gobo Wheel* | **RunTest** | | |
| | **Edge** *Edge* | **RunTest** | | |
| | **Zoom** *Zoom* | **RunTest** | | |
| | **BeamIris** *Beam Iris* | **RunTest** | | |
| | **Lamp** *Lamp (Disables Pan and Tilt for lamp adjustment)* | **RunTest** | | |
| | **Encoder** *Encoder (Allows hand movement to check values)* | **Pan** | **Value** | |
| | | **Tilt** | **Value** | |
| | **Sensor** *Sensors Test* | **Pan** *EOT Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |
| | | **Tilt** *EOT Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |
| | | **Dimmer** *Position Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |
| | | **Cyan** *Cyan Color Wheel Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |
| | | **Yellow** *Yellow Color Wheel Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |
| | | **Magenta** *Magenta Color Wheel Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |
| | | **Color Whl** *Fixed Color Wheel Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |
| | | **RotGobo** *Rotating Gobo Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |
| | | **GobIndx** *Gobo Index Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |
| | | **Fix Gobo** *Fixed Gobo Wheel Sensor* | **Sens Tst** *Sensor Test in Progress* | **PASS** |
| | | | | **FAIL** |

*Refer to “Diagnostic Tests” on page 61 for more information.

# Function Definitions

Each menu item is listed in the first column by its display abbreviation. The abbreviations appear in alphabetical order as opposed to their position in the menu display sequence for easy reference.

**Table 4-2: Menu Function Definitions**

| Display | Definition | Purpose |
|---|---|---|
| **10Min** | 10 Minutes | Sets Menu Display to automatically shut off after 10 minutes of non-use. |
| **30sec** | 30 Seconds | Sets Menu Display to automatically shut off after 30 seconds of non-use. |
| **5Min** | 5 Minutes | Sets Menu Display to automatically shut off after 5 minutes of non-use. |
| **Address** | Address | Accesses functions for setting luminaire starting address in DMX (**DMX**) controlled systems. |
| **ALL SEQ** | All Sequence | Performs all tests in sequential order. |
| **Beam Iris** | Beam Iris | Specifies beam iris function for manual control (**Manual**) or for testing (**Test**). |
| **Cal ON** | On after Calibration | Configures arc luminaire so that lamp will strike after calibration procedure is complete. |
| **ChgLumID** | Change the luminaire ID number | Allows access to change or set the luminaire ID number. |
| **Config** | System Configuration | Accesses functions for setting lamp start up, pan/tilt, Menu Display, changing luminaire ID, and resetting luminaire default values. |
| **ColorMix** | Crossfade Color Wheels | Specifies crossfade color wheels for testing (**Test**). |
| **ColrWhl** | Color Wheel | Specifies fixed color wheel for testing (**Test**). |
| **Chan XX** | DMX Channel | Specifies DMX channel for display of current data value. |
| **Cyan** | Cyan Color Wheel | Specifies Cyan color wheel for manual control (**Manual**) or for testing (**Test**). |
| **Data** | DMX Data | Accesses function for displaying DMX data by channel number. |
| **Dimmer** | Dimmer | Specifies dimmer mechanism for manual control (**Manual**) or for testing (**Test**). |
| **Disable** | Disable | Disables a function. |
| **Display** | Display Illumination | Accesses options for Menu Display on and off times. |
| **DMX** | DMX | Accesses functions for setting DMX Data or pan/tilt options. |
| **Download** | Download | Downloads program to luminaires. |
| **Edge** | Edge Motor | Specifies edge function for manual control (**Manual**) or for testing (**Test**). |
| **Enable** | Enable | Enables a function. |
| **Encoder** | Encoders | Accesses pan or tilt encoder for diagnostic testing (**Test**). |
| **FAIL** | Test Fail | Indicates that sensor test has failed. |
| **FixColWhl** | Fixed Color Wheel | Specifies fixed color wheel for manual control (**Manual**). |
| **FixGobo** | Fixed Gobo | Specifies fixed gobo wheel for manual control (**Manual**) or for testing (**Test**). |
| **Fixt Hrs** | Fixture Hours | Displays total number of hours luminaire has been powered on. |
| **Fixture** | Fixture | Access luminaire specification information such as software version, along with status information and download function. |

**Table 4-2: Menu Function Definitions (Continued)**

| Display | Definition | Purpose |
|---|---|---|
| **Gobo** | Gobo Select | Specifies rotating gobo select for manual control (**Man**) or gobo select EOT sensor for testing (**Test**). |
| **GobIndx** | Gobo Indexes | Specifies rotating gobo select sensor for testing (**Test**). |
| **Index** | Gobo Index | Specifies rotating gobo index for manual control (**Manual**). |
| **InvPan** | Invert Pan | Reverses pan action for special focus requirements. |
| **InvTilt** | Invert Tilt | Reverses tilt action for special focus requirements. |
| **Lamp** | Lamp Options | For accessing lamp options and configuration (**Config**) or for testing (Test) to disable pan/tilt for lamp adjustment. |
| **Lamp OFF** | Lamp Off | Configures arc luminaire to strike lamp on manual command. |
| **Lamp ON** | Lamp On | Configures arc luminaire to strike lamp at power up. |
| **Lamp Hour** | Lamp Hours | Displays total number of lamp operating hours. |
| **LumId** | Luminaire ID | Displays unique indentification number for the luminaire. |
| **Magenta** | Magenta Color Wheel | Specifies Magenta color wheel for manual control (**Manual**) or for testing (**Test**). |
| **Manual** | Manual Commands | Accesses functions for controlling luminaire mechanisms and timing by entry of an absolute data value. |
| **Model** | Model | Displays type of luminaire (**Spot** or **Wash**). |
| **Move-ment** | Movement | Enables and disables pan and tilt movement and auto-correction. |
| **NoProg** | No Program | Indicates that there is no software present in the luminaire. |
| **OFF** | Off | Turns off a function. |
| **OK** | Okay | Indicates that luminaire is ready to accept commands. |
| **OK?** | Okay? | Prompt for pressing [Enter] before an action is executed. |
| **ON** | On Indefinitely | Sets Menu Display to stay on until programmed otherwise (**Display**), turns on a function, or turns on a menu item. |
| **Pan/Tilt** | Pan/Tilt | Accesses pan and tilt options for DMX function, system configuration, and testing. |
| **Pan** | Pan | Specifies pan function for manual control (**Manual**) or pan encoder for testing (**Test**). |
| **PASS** | Test Pass | Indicates that sensor test has passed. |
| **Power** | Lamp Power | Accesses function to turn lamp on or off. |
| **Power Up** | Lamp Power Up | Accesses options for lamp power up: on, off, or after calibration. |
| **Re-cal** | Recalibrate | Recalibrates luminaire. |
| **Reset Def** | Reset Default | Resets default system configuration values. |
| **Reset Hrs** | Reset Lamp Info | Resets lamp hour and lamp strike counters. For use when new lamp is installed. |
| **RotGobo** | Rotating Gobo | For setting (**Manual**) or testing (**Test**) rotating gobo wheel or sensor. |
| **RunTest** | Run Test | Indicates that a system test is in progress. |
| **Sensor** | Sensors | Accesses sensor choices for diagnostic testing. |
| **Sens Tst** | Sensor Test | Indicates that a system sensor test is in progress. |
| **SetUp** | Luminaire Set Up | For selecting which (**Model**) of luminaire - spot or wash. |
| **Spot** | Spot Luminaire | Sets the software to work in a VL2500 Spot Luminaire. |

### Table 4-2: Menu Function Definitions (Continued)

| Display | Definition | Purpose |
|---|---|---|
| **Status** | Status/Error Display | Provides the status of the fixture (**Fixture**) and any error messages. |
| **Strobe** | Strobe | Specifies strobe function for manual control (**Manual**) or for testing (**Test**). |
| **Swap** | Swap | Swaps pan and tilt functions for special focus requirements such as moving mirror mechanisms. |
| **Test** | System Tests | Accesses diagnostic tests for luminaire's mechanisms. |
| **Tilt** | Tilt | Specifies tilt function for manual control (**Manual**) or tilt encoder for testing (**Test**). |
| **Version** | Software Version | Displays current software version by date (**XX/XX/XX**). |
| **Wash** | Wash Luminaire | Sets the software to work in a VL2500 Wash Luminaire. |
| **Yellow** | Yellow Color Wheel | Specifies Yellow color wheel for manual control (**Manual**) or for testing (**Test**). |
| **Zoom** | Zoom | Specifies zoom function for manual control (**Manual**) or for testing (**Test**). |

# Self Tests

## Running Parameter Tests

The luminaire is capable of running self tests by using the TEST menu functions. For complete details and values for each test refer to "Diagnostic Tests" on page 61.

**Note:** After 10 seconds of inactivity, the menu display will change to the default state showing the address.

When running tests on multiple luminaires, a DMX termination connector is required at the last luminaire in the link. (Refer to page 12 for more information regarding the construction of this connector.)

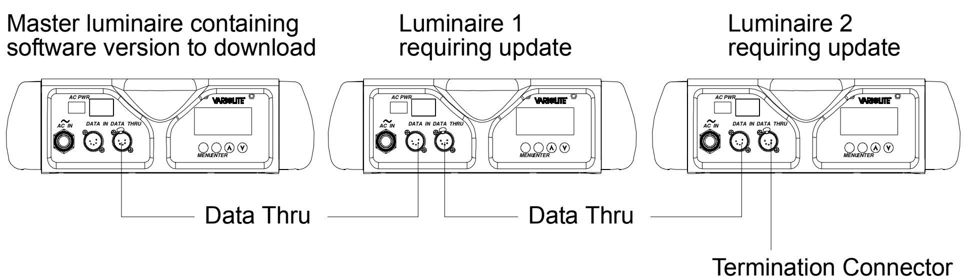



**Figure 4-2: Test Setup**

**To run tests:**

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Test appears. Press [Enter].

Step 3. Use [Up] / [Down] arrows to select a parameter to test. Refer to "Menu System Functions" on page 53 for a complete list of test parameters which can be chosen.

Step 4. Press [Enter] to run test.

Step 5. Press [Menu] to stop test at any time.

**Note:** Connected luminaires may not respond on the first action (may delay) of the master luminaire.

### Movement Disable

The Movement option allows pan and tilt to be disabled so that the luminaire can be placed in any position for testing without movement occurring. In order to regain full control of the luminaire, Movement will need to be enabled after testing.

---

**Note:** When using the Movement option, pan and tilt will be disabled for all the luminaires that are linked.

---

**To set movement option:**

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Config appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows until Pan/Tilt appears. Press [Enter].

Step 4. Movement will be displayed. Press [Enter].

Step 5. Use [Up] / [Down] arrows to select Enable or Disable. Press [Enter] to select.

# Diagnostic Tests

The following diagnostic tests are available in the test menu.

## Test Descriptions

All Seq................. Tests all functions in sequential order.
Pan/Tilt ................ Tests different pan and tilt movements.
Pan...................... Tests different pan movements.
Tilt ....................... Tests different tilt movements.
Dimmer................ Tests different dimmer moves/operation.
Strobe.................. Tests different strobe moves/operation.
Cyan.................... Tests Cyan color wheel movements.
Yellow .................. Tests Yellow color wheel movements.
Magenta .............. Tests Magenta color wheel movements.
ColrMix ................ Tests all CYM color wheels in various positions.
ColorWhl ............. Tests fixed color wheel.
RotGobo.............. Tests rotating gobo wheel movement.
GobIndx............... Tests rotating gobos movement.
FixGobo............... Tests fixed gobo wheel movement.
Edge.................... Tests edge movement.
Zoom ................... Tests zoom movements.
Beam Iris ............. Tests iris movement.
Lamp ................... Allows user to manually put luminaire in position to align lamp.
Encoder............... Disables pan and tilt and displays encoder value.
Sensor................. Tests sensors for selected test (Pan, Tilt, Dimmer, Cyan, Yellow, Magenta, Color Wheel, Rotating Gobos, Gobo Index, or Fixed Gobo Wheel).

# Notes

# APPENDIX A.

# Troubleshooting and Maintenance

This appendix provides instructions for troubleshooting and performing routine maintenance which may be necessary during the life of the luminaire.

- **Troubleshooting**
- **Routine Maintenance**

---

**WARNING:** All maintenance procedures are to be performed with power removed from the luminaire. Never open removable cover while lamp is in operation.

---

# Troubleshooting

## Error Messages

If a problem occurs during luminaire calibration, at the end of the calibration sequence the Menu Display will cycle through any applicable error message(s), one at a time until the end of the list is reached. To review the error messages again, it will be necessary to access them using the Status function.

Refer to next page for a list of possible causes and remedies associated with the error messages.

**To access error messages:**

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Fixture appears. Press [Enter].

Step 3. Press [Up]/ [Down] arrows to access Status. Press [Enter]. (Display will now scroll through any error messages or display OK if no errors.)

| Display | Message |
|---|---|
| OK | No Errors Found |
| Pan/No Sens | Pan sensor not found. |
| Pan/Encoder/Fail | Pan encoder failure. |
| Tilt/No Sens | Tilt sensor not found. |
| Tilt/Encoder/Fail | Tilt encoder failure. |
| Index/No Sens | Gobo Index sensor not found. |
| RotGobo/No Sens | Rotating Gobo wheel sensor not found. |
| FixGobo/No Sens | Fixed Gobo wheel sensor not found. |
| Dimmer/No Sens | Dimmer sensor not found. |
| Cyan/No Sens | Cyan sensor not found. |
| Yellow/No Sens | Yellow sensor not found. |
| Magenta/No Sens | Magenta sensor not found. |
| ColWheel/No Sens | Color wheel sensor not found. |
| Zoom/No Sens | Zoom sensor not found. |
| Edge/No Sens | Edge sensor not found. |

**Table A-1: Error Messages**

## Troubleshooting Guide

If a problem is suspected, first try recalibrating the luminaire to prompt an error message. The chart below provides possible causes and remedies for various error messages and/or symptoms.

**CAUTION:** Some troubleshooting is included for reference only. Performing remedies may void product warranty. Refer to the Vari-Lite Limited Warranty card included with the product.

**Table A-2: Troubleshooting Guide**

| Message | Symptom | Description | Possible Cause/Remedy |
|---|---|---|---|
| Lamp Power Douse | Lamp does not strike upon start-up | Lamp Off option is configured | - Reconfigure lamp startup option in Lamp config menu. |
| n/a | Lamp douses frequently | Lamp Douse | Fan failure...<br>- check fans for proper connection and operation. |
| n/a | Lamp will not strike | Lamp Strike Failure | Lamp cutout switch disengaged...<br>- check lamp cutout switches at lamp box and fan ducts.<br>Bad lamp...<br>- replace lamp.<br>Low input voltage...<br>- check input power (must be 100 to 240 VAC). |
| n/a | Luminaire behaves oddly | Profile Not Matched | Profile not set correctly...<br>- check Setup menu for correct type (console patch / profile). |
| n/a | Luminaire does not power up | No power | Switch not turned on...<br>- verify switch is turned on.<br>Not plugged in...<br>- ensure A/C cable is connected to power source. |
| n/a | Self tests will not run or software download does not work from luminaire. | DMX Data Input | Detecting DMX data...<br>- disconnect DMX input cable. |
| n/a | No response to DMX data | DMX Failure | DMX connector disconnected...<br>- check DMX DATA IN connection. |
| n/a | Erratic control of luminaire | DMX Termination | No DMX termination or termination not correct...<br>- check for DMX terminator. |

# Routine Maintenance

## Lamp Replacement

**WARNING:** Remove power from luminaire before performing maintenance.

**Tools:**
Screwdriver, slotted
Cotton gloves

**To replace lamp:**

Step 1. Remove power from luminaire.

**WARNING:** Lamps will be extremely HOT after operation. Allow lamp to cool before replacing.

Step 2. At backcap, using slotted screwdriver (or fingers) turn captive knob until loose.

Step 3. Slide backcap away from head assembly (it will remain attached by tether and lamp wires).

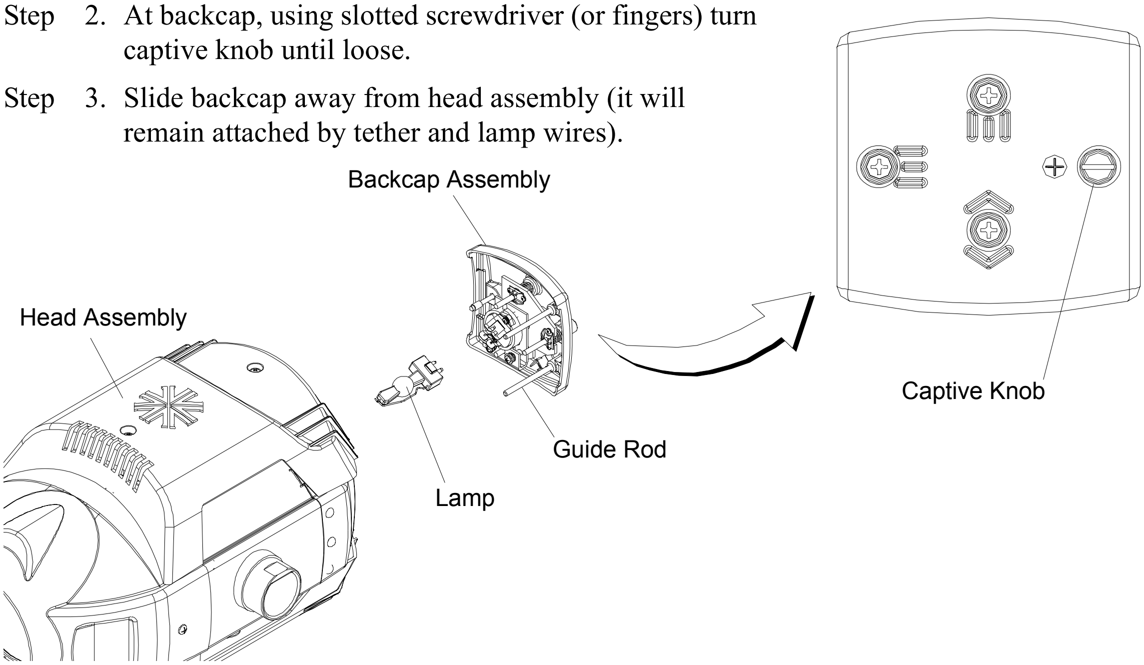



**Figure A-1: Replacing Lamp**

**CAUTION:** Wear cotton gloves or other covering while servicing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If required, use alcohol and cotton cloth to thoroughly clean glass portion of lamp.

Step 4. Remove lamp by pulling straight out of socket.

Step 5. Install new lamp by pressing into socket. Ensure lamp is fully seated in socket and parallel to guide rods. (Lamp can be damaged when inserted through reflector if not parallel to guide rods.)

Step 6. Align guide rods in guide holes and slide backcap into head assembly. Re-tighten captive knob.

Step 7. If required, reset lamp hour counter as follows. (Refer to “Menu System” chapter on page 49 for more information.)

a. Power up luminaire.

b. At Menu Display, press [Menu].

c. Press [Up] / [Down] arrows until Config (Configuration) appears. Press [Enter].

d. Press [Up] / [Down] arrows until LAMP appears. Press [Enter].

e. Press [Up] / [Down] arrows to access ResetHrs (Reset Lamp Hours). Press [Enter] to reset lamp hour counter.

Step 8. Align lamp. Refer to “Align Lamp for Flat Field” on page 19.

## Color Filter Replacement

**WARNING:** Remove power from luminaire before performing maintenance.

**Tools:**
Screwdriver, Phillips #2
Cotton gloves

**To remove and replace a color filter:**

Step 1. Remove power from luminaire.

Step 2. At removable cover, using #2 Phillips screwdriver, turn two captive screws and remove cover. (It will remain attached by tether.)

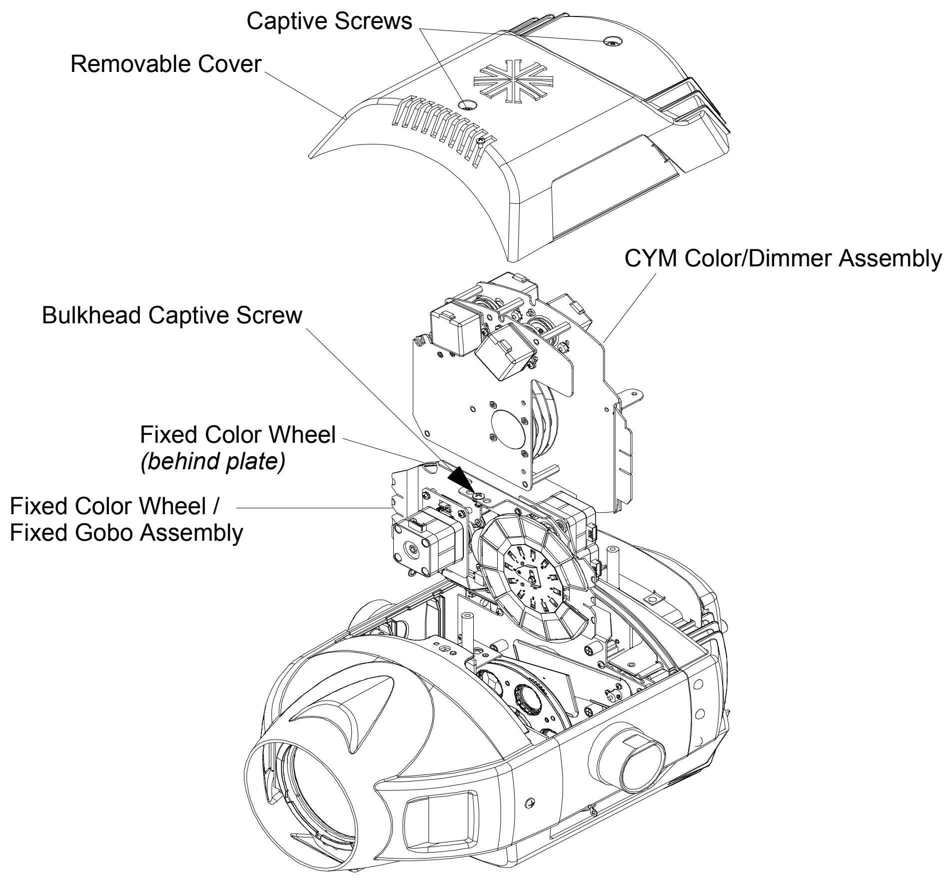



**Figure A-2: Replacing a Color Filter**

**CAUTION:** Do not touch color filters with bare fingers. Wear cotton gloves or other covering while replacing. Clean with glass cleaner and soft cloth if required.

**Note:** In some cases it is easier to slide bulkhead partially out of head assembly to access color filters. To do this, use #2 Phillips screwdriver to turn captive screw one-quarter turn and slide bulkhead upward. Disconnect motor connections as necessary.

Step 3. Remove CYM Color / Dimmer Assembly.

Step 4. Rotate wheel until required color filter is accessible at finger access cutout.

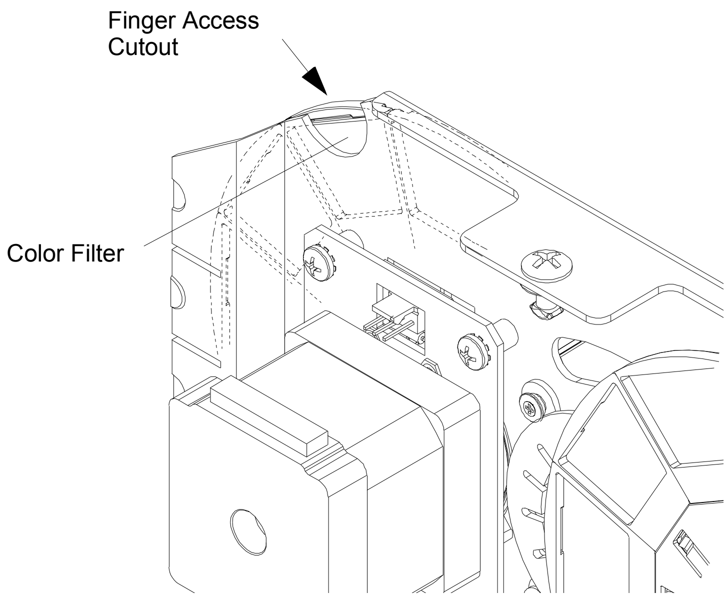



**Figure A-3: Filter Access**



**CAUTION:** Do not touch color filters with bare fingers. Wear cotton gloves or other covering while replacing. Clean with glass cleaner and soft cloth if required.

Step 5. Using fingers, pull color filter out of wheel.

Step 6. Noting proper orientation of carrier indention, insert new color filter into position and push fully into place.

Step 7. Re-install bulkheads and re-install removable cover.

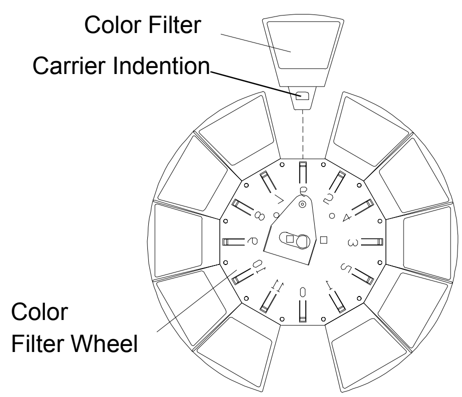



**Figure A-4: Color Filter Removal**

# Fixed Gobo Replacement

**WARNING:** Remove power from luminaire before performing maintenance.

**WARNING:** Users of VARI✻LITE luminaires should not install or use metal gobos. The use of metal gobos in any VARI✻LITE product may damage the luminaire and could void the luminaire's warranty.

**Tools:**

Screwdriver, Phillips #2
Cotton gloves

**To remove and replace a fixed wheel gobo:**

Step 1. Remove power from luminaire.

Step 2. At removable cover, using #2 Phillips screwdriver, turn two captive screws and remove cover. (It will remain attached by tether.)

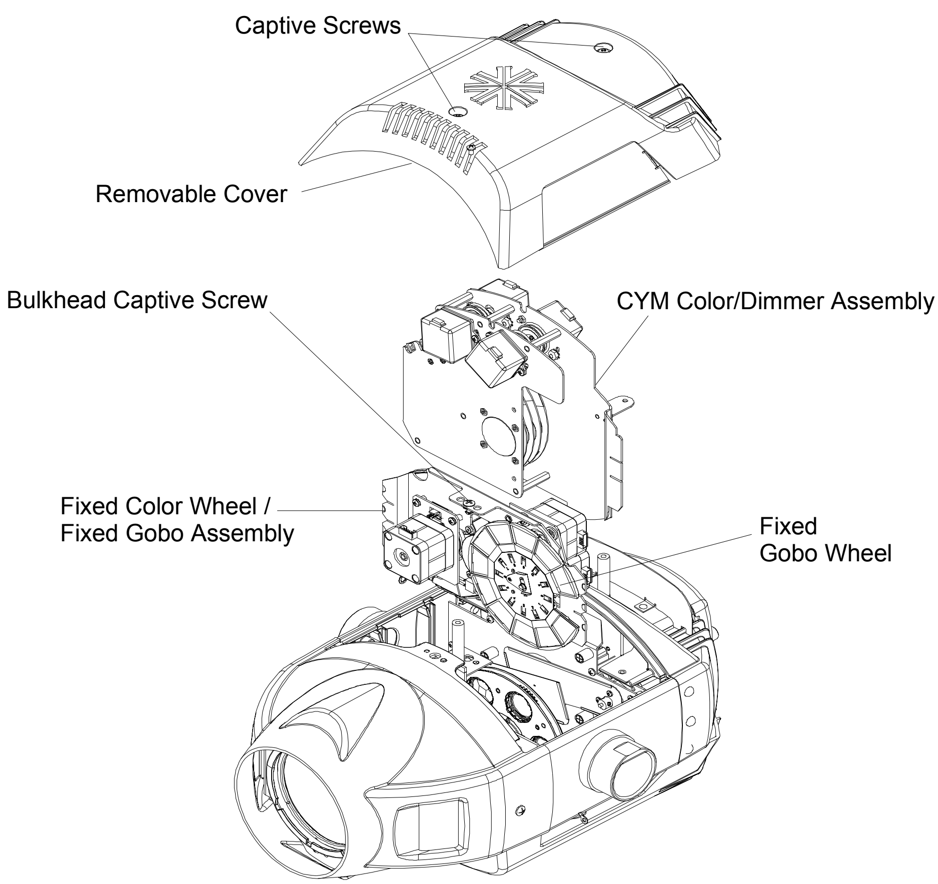



**Figure A-5: Replacing a Fixed Gobo**

**CAUTION:** Do not touch gobos with bare fingers. Wear cotton gloves or other covering while replacing. Clean with glass cleaner and soft cloth if required.

**Note:** In some cases it is easier to slide bulkhead partially out of head assembly to access gobos. To do this, use #2 Phillips screwdriver to turn captive screw one-quarter turn and slide bulkhead upward. Disconnect motor connections as necessary.

Step 3. Remove CYM Color / Dimmer Assembly.

Step 4. Rotate wheel until required gobo is accessible at finger access cutout.

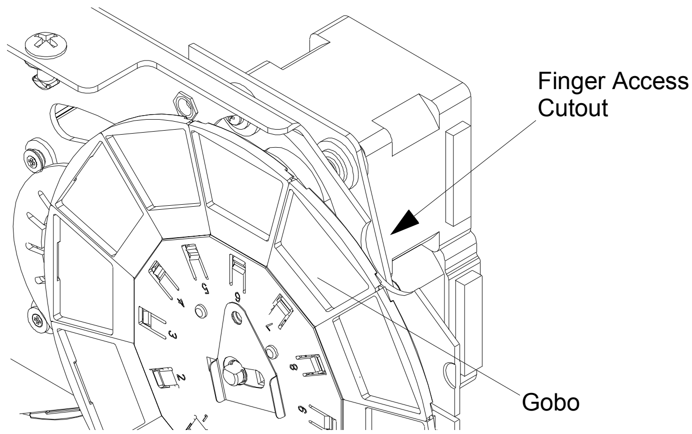



**Figure A-6: Gobo Access**

Step 5. Using fingers, pull gobo out of wheel.

Step 6. Noting proper orientation of carrier indention and orienting "black" side of gobo toward front lens, insert new gobo into position and push fully into place.

Step 7. Re-install bulkhead (if applicable) and re-install removable cover.

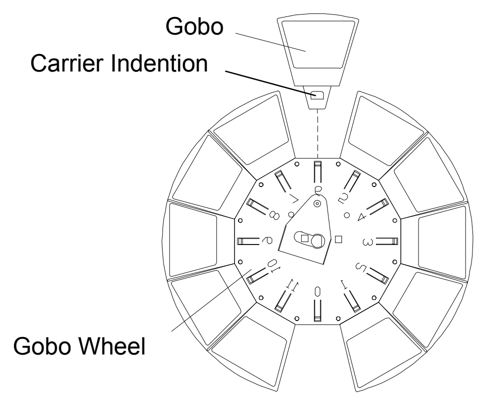



**Figure A-7: Fixed Gobo Removal**

## Rotating Gobo Replacement

**WARNING:** Remove power from luminaire before performing maintenance.

**WARNING:** Users of VARI✻LITE luminaires should not install or use metal gobos. The use of metal gobos in any VARI✻LITE product may damage the luminaire and could void the luminaire's warranty.

**Tools:**

Screwdriver, Phillips #2
Hook and Pick tool (or small slotted screwdriver)
Cotton gloves

**To remove and replace a rotating gobo:**

Step 1. Remove power from luminaire.

Step 2. At removable cover, using #2 Phillips screwdriver, turn two captive screws and remove cover. (It will remain attached by tether.)

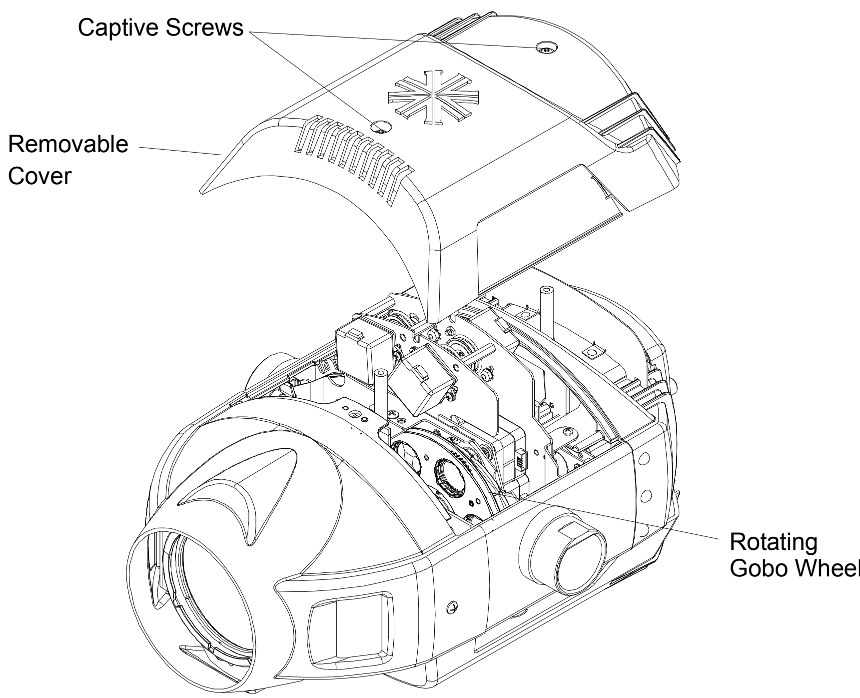



**Figure A-8: Replacing a Rotating Gobo**

**CAUTION:** Do not touch gobos with bare fingers. Wear cotton gloves or other covering while replacing. Clean with glass cleaner and soft cloth if required.

Step 3. At rotating gobo wheel, rotate until required gobo/filter is accessible.

Step 4. FOR GAGS OR GOBOS THAT DO NOT REQUIRE A CARRIER - Locate end of coiled spring which is fitted under carrier tab. Using hook and pick tool or small slotted screwdriver, push end of spring from under tab until it is free. Once free, remove entire coiled spring.

Step 5. FOR GOBOS THAT ARE FITTED INTO THEIR OWN CARRIER - Remove gobo by pressing on side opposite of "O" Ring.

***Only For Gags or Gobos that do not require a carrier***

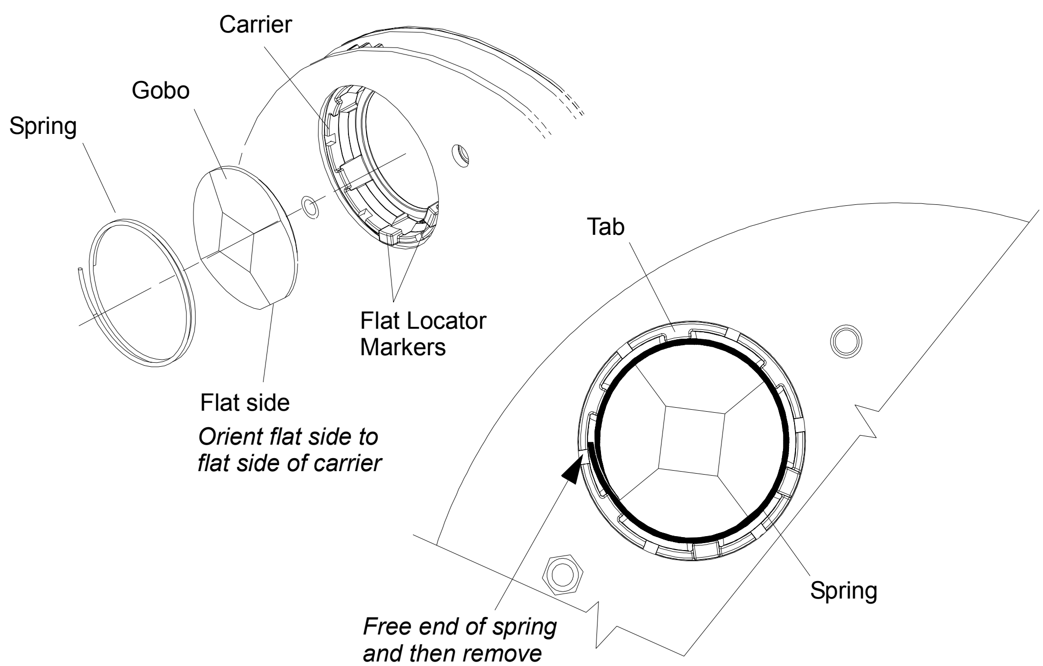



**Figure A-9: Rotating Gobo Removal**

**CAUTION:** Do not touch gobos with bare fingers. Wear cotton gloves or other covering while replacing. Clean with glass cleaner and soft cloth if required.

Step 6. Remove gobo.

Step 7. Aligning flat side correctly and orienting “black” side of gobo toward front lens, install new gobo.

Step 8. Re-install spring, ensuring it is fully secured under carrier tabs (for Gags or Gobos that do not require a carrier).

Step 9. Re-install removable cover.

## Cleaning Optical Lenses and Filters

**WARNING:** Remove power from luminaire before performing maintenance.

The front lens, color filters, and gobos may require cleaning after extended use. Acetone or Isopropyl Alcohol (follow manufacturer's direction on handling and use of these products) can be used along with a soft, lint-free cloth to clean these components.

**CAUTION:** Do not continuously rub filters or it may damage or remove the optical coating.

# *APPENDIX B.*

# Technical Specifications

## Mechanical

**Color Mixing System**

A three-filter CYM cross-fading mechanism. A fixed color wheel with 11 interchangeable color filters and one open space capable of continuous rotation for additional effects.

**Gobo Wheels**

One, Six-position rotating gobo wheel with five rotatable, indexable gobo positions and one open position.

One, 12-position wheel providing 11 easily loaded positions (and 1 open) for user-selectable gobo choices. Wheel is capable of continuous rotation for additional effects.

**Zoom Optics**

Zoom angle of 2.3 to one. Continuously variable field angle from 18.5° to 42°. Programmable over a timed range of 2 seconds to 20 minutes.

**Edge and Pattern Focus**

Variable beam focus to soften edges of gobos or spots.

**Beam Size**

A mechanical iris provides continuous beam size control for both rapid changes and smooth timed beam angle changes in addition to the zoom optics.

**Strobe**

A high-performance dual blade strobe system capable of ultra-fast operation.

**Pan/Tilt**

Smooth, time-controlled continuous motion by way of a three-phase stepper motor system. Range: Pan - 540° , Tilt - 270°.

**Pan/Tilt Accuracy**

0.3° resolution.

**Weight**

59.2 lbs (26.9 kg)

**Spacing**

Refer to illustration on page 14.

## Optical

**Source**

700 Watt Short-Arc Lamp, 5600°K, 80CRI

**Reflector**

Precision glass reflector with dichroic cold mirror coating. Flat field design.

## Operational

**Power Requirements**

The VL2500 Spot is powered through standard AC power distribution and requires 3 to 12 Amps depending on the AC supply voltage.

The VL2500 Spot operates from 100-240 [+/- 10%] VAC, 50/60 Hz

**Operational Temperature**

-20° to 120°F (50°C) at voltages above 100 VAC.

**Cooling**

Forced air cooling.

**Control**

Compatible with a wide variety of DMX consoles.

**Mounting Position**

The luminaire can be mounted and operated in any orientation.

## Photometric

**VL2500 Spot - 700W Metal Halide**

(All data taken with a seasoned light source at 20 hours of life.)

| LENS | CANDELA (cd) | BEAM ANGLE (degrees) | BEAM DIAMETER TN* | FIELD ANGLE (degrees) | FIELD DIAMETER TN* |
|---|---|---|---|---|---|
| **NFOV** | 320,000 | 12.5 | .219 | 18.5 | .326 |
| **MFOV** | 102,100 | 20.5 | .362 | 31.5 | .564 |
| **WFOV** | 51,200 | 28.5 | .508 | 42 | .768 |

* Multiply throw distance by Tn to determine coverage.

To calculate Illuminance (I) at a specific distance (D): $I = \frac{cd}{D^2}$

# Returning Parts for Service

**Obtaining RMA Number and Returning Parts**

1. Contact Service Center.
2. Request Return Material Authorization (RMA) number.
3. Do not remove glass color discs from luminaire subassemblies.
4. Package all parts being shipped. Please take great care in packing your items. Wrap all subassemblies and loose parts in bubble wrap or specialty packing material (if required) before shipping.
5. Fill in the form below and pack in box with parts.
6. Return parts and form to the following address:

**Vari-Lite**
**RMA# _________**
**10911 Petal Street**
**Dallas, Texas 75238 USA**

RMA Number: ____________________

Customer Name: ____________________

Fixture Serial Number: ____________________

Equipment Type: ____________________

Assembly: ____________________

Project: ____________________

Symptoms: ____________________

____________________

Suspected Fault: ____________________

____________________

____________________

Comments: ____________________

____________________

____________________

For Office Use Only

| | Technician | Date |
|---|---|---|
| Reported | | |
| Repaired | | |
| Logged | | |
| Repairs Completed | | |

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®

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